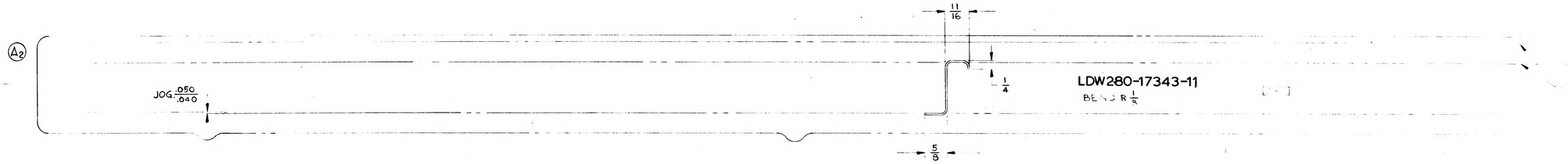
LDW280-17343

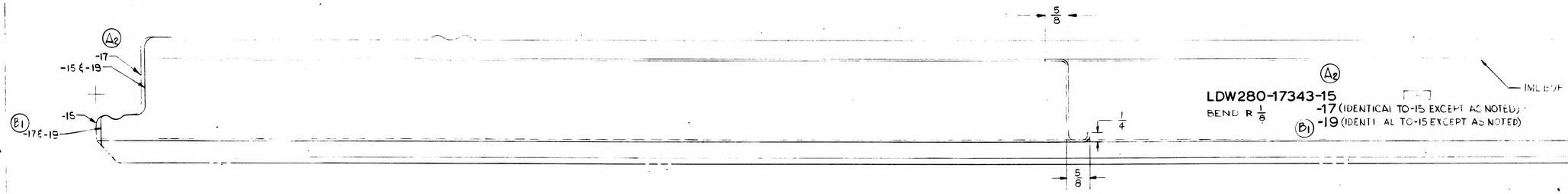
8 7 6 5

C

B

A





01/03 NAS 9-1100

CODE IDENT NO 26512
LDW280-17343 SH 3

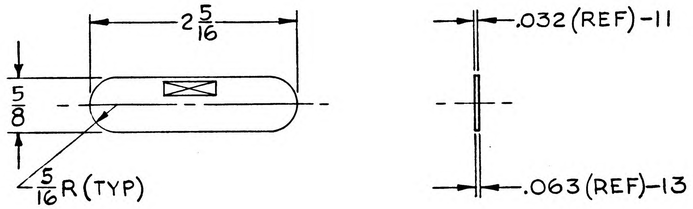
8 7 6 5

2/3

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠	✓



LDW280-17288-11
-13 (IDENT TO -11 EXCEPT AS NOTED)

(2)

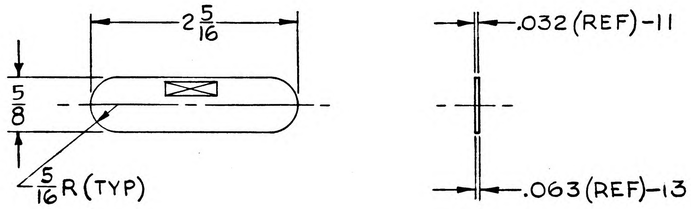
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
SIZE B	CODE IDENT NO. 26512	LDW280-17288	
SCALE FULL		SHEET 3	

ENG 73.1 6-64

01 NAS 9-1100

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠	✓



LDW280-17288-11
-13 (IDENT TO -11 EXCEPT AS NOTED)

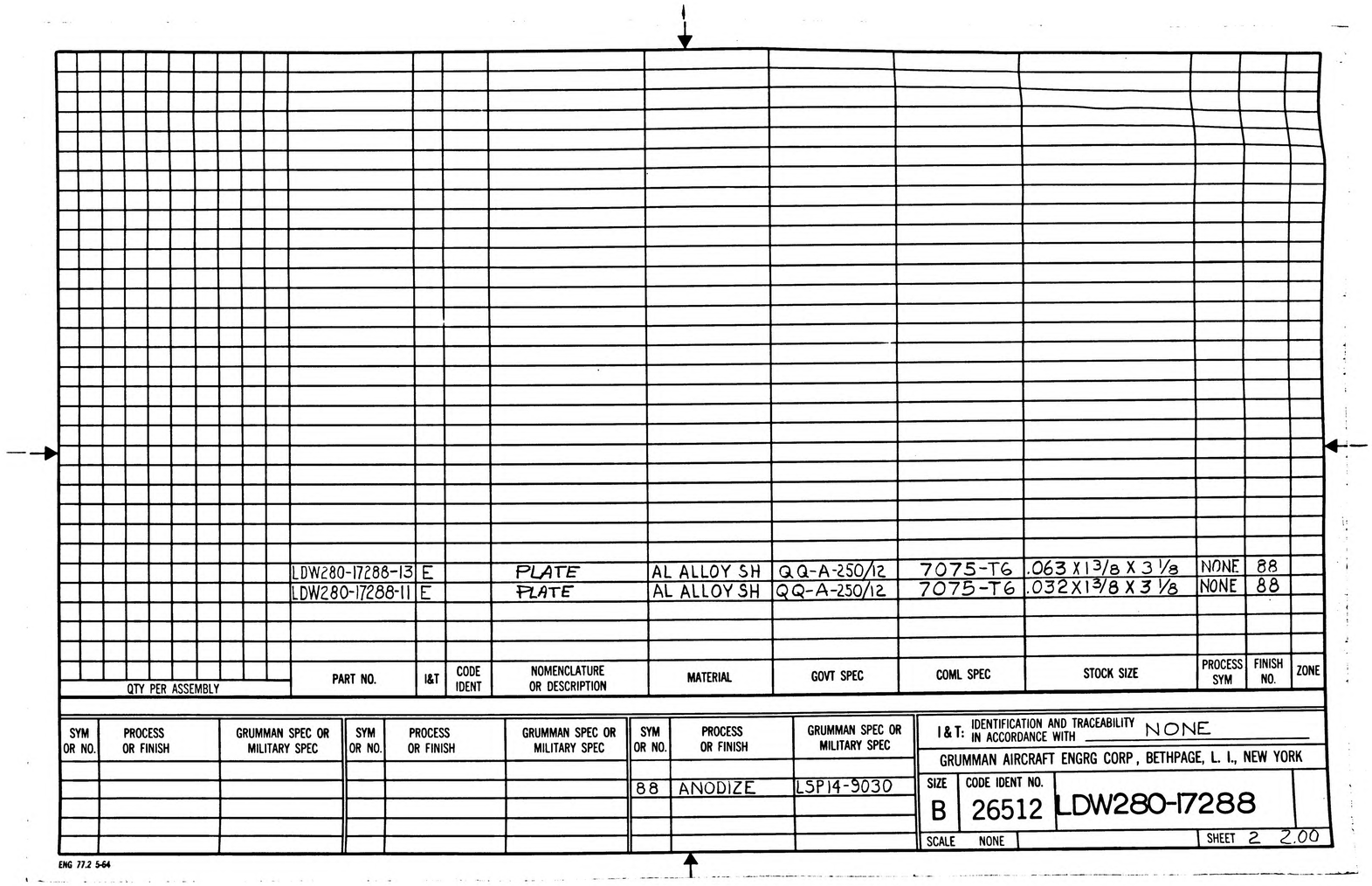
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
SIZE B	CODE IDENT NO. 26512	LDW280-17288	
SCALE FULL		SHEET 3	

ENG 72.1 6-64

2

01

NAS 9-1100



QTY PER ASSEMBLY	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	LDW280-17288-13	E		PLATE	AL ALLOY SH	QQ-A-250/12	7075-T6	.063 X 1 3/8 X 3 1/8	NONE	88	
	LDW280-17288-11	E		PLATE	AL ALLOY SH	QQ-A-250/12	7075-T6	.032 X 1 3/8 X 3 1/8	NONE	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17288

SCALE NONE SHEET 2 2.00

ENG 77.2 5-64

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO.	LEO280		EO NO. 159
CONTROL INFO NO.	LDW280-7873		

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED*
RESTRICT N/A LDW 280-25520 TO LTA -5(15) ONLY
ADD N/A LDW280-28520 FOR LTA-8(18) & LEM-1(31)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17120-11	B5	WEB
-17224-21	B2	DOUBLER
-17233-30		ANGLE
-31		
-33		
-34		
-35		
-17233-37	C1	ANGLE
-17236-11		ZEE
-13		
-15		
-17236-17	A2	ZEE
-17288-11		STRAP
-17288-13	B1	STRAP
-17309-11	B1	PLATE
-17310-11		STIFFENER
-13		
-14		
-15		
-17		
-17310-19	A1	STIFFENER
-17330-34		ANGLE
-36		
-42		
-17330-32	C1	ANGLE
-17405-13		PLATE
-17405-17	B1	
-17406-13		
-17406-15	B1	PLATE
-17440-11		ANGLE
-13		
-17440-15	A1	
-17437-17		
-13		
-17437-15	A3	
-17444-11		
-17444-13	A2	ANGLE
-17614-11	B1	PLATE
LDW280-17617-11	B2	PLATE
LDW280M17259-1	A1	FITTING
LDW280-17749-13		CLIP
LDW280-17749-17	A4	CLIP

*USE APPLICABLE DASH NO IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: ADDITION OF AMBIENT He TANK

DESCRIPTION OF EO: FOR * N/A WAS LDW280-25531 EFF LTA-5-8 & LEM-1 ADDED N/A LDW280 28520 FOR LTA-8/LEM-1

GAEC EO RELEASE: VE 7/26

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	
LEM		LEM-1(31)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: REWORK for LEM-1; SCRAP
APPROVED BY / DATE: VDI; SUPPORT; RELIAB. GROUP; GROUP LEADER; STRESS GROUP (6130); LIAISON ENGRG (Hubley 7-2-66); PROJ. ENGRG (Plumbtree 7/20/66)

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 159

ISSUED BY J. Backofen / J. STRAKOSCH SECTION VEHICLE DESIGN GROUP NO. 335 PL 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280 | EO NO. 159
CONTROL INFO NO. LDW280-7873

ENG 22.2 REV 3-65

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED*
RESTRICT N/A LDW 280-25520 TO LTA-5(15) ONLY
ADD N/A LDW280-28520 FOR LTA-8(18) & LEM-1(31)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17120-11	B5	WEB
-17224-21	B2	DOUBLER
-17233-30		ANGLE
-31		
-33		
-34		
-35		
-17233-37	C1	ANGLE
-17236-11		ZEE
-13		
-15		
-17236-17	A2	ZEE
-17288-11		STRAP
-17288-13	B1	STRAP
-17309-11	B1	PLATE
-17310-11		STIFFENER
-13		
-14		
-15		
-17		
-17310-19	A1	STIFFENER
-17330-34		ANGLE
-36		
-42		
-17330-32	C1	ANGLE
-17405-13		PLATE
-17405-17	B1	
-17406-13		PLATE
-17406-15	B1	ANGLE
-17440-11		
-13		
-17440-15	A1	
-17437-17		
-13		
-17437-15	A3	
-17444-11		ANGLE
-17444-13	A2	PLATE
-17614-11	B1	PLATE
LDW280-17617-11	B2	FITTING
LDW280M17259-1	A1	CLIP
LDW280-17749-13		CLIP
LDW280-17749-17	A4	

*USE APPLICABLE DASH NO IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: ADDITION OF AMBIENT Hc TANK

DESCRIPTION OF EO: FOR * N/A WAS LDW280-25531 EFF LTA-5,-8 & LEM-1
ADDED N/A LDW280 28520 FOR LTA-8 & LEM-1

GAEC EO RELEASE: IE 7/26

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	
LEM		LEM-1(31)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: NOT REQ'D | REWORK | SCRAP

APPROVED BY: DATE 6/21/66 | VDI | SUPPORT | RELIAB. GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG

Blumhoff 6/30 | Booth 6/30 | C130 | Ashley 7-2-66

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LE0280
EO NO.: 159

ISSUED BY: T. Backofen / J. STRAKOSCH
SECTION: VEHICLE DESIGN
GROUP NO.: 335
PL: 35

NAS 9-1100

LEM	LDW280-23575	LEM-6(36)	1
↕	↕	LEM-5(35)	1
↕	↕	LEM-4(34)	1
↕	↕	LEM-3(33)	1
LEM	LDW280-23575	LEM-2(32)	1

PART NO. LDW280-17289-15

LEM	LDW280-25575	LEM-1 (31)	1
LEM	LDW280-25575	LTA-8 (18)	1
LEM	LDW280-25575	LTA-5 (15)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17289-11		51-2	

LEM	LDW280-23575	LTA-3(13)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17289-13			

LEM	LDW280-23575	LEM-6(36)	1
↕	↕	LEM-5(35)	1
↕	↕	LEM-4(34)	1
↕	↕	LEM-3(33)	1
↕	↕	LEM-2(32)	1
↕	↕	~~LTA-3(13)~~	~~1~~
↕	↕	~~LEM-1(31)~~	~~1~~
↕	↕	~~LTA-8(18)~~	~~1~~
LEM	LDW280-23575	~~LTA-5(15)~~	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
PART NO. ~~LDW280-17289-11~~		~~51-2~~	

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH				
SHEET	1.00	1.10	2.00	3.00
REV	B	B	B	B
SHEET				
REV				
SHEET				
REV				

LAST SECT LTR USED	
LAST DASH NO. USED	-15

GRUMMAN REL INFO A/B

PRIM NO. VE(0071) 207 IMP12 F S

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS ± 1/32 DECIMALS ± .020 ANGLES ± 1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100		LINE ITEM	DOCUMENTATION TYPE II
DRAWN BY	MONTEMAGNO 2-14-66	RELIABILITY	
LAYOUT BY	J. BUKOWSKI 2/9/66		
CHECKED BY	EG 2-17-66		
GR LEADER	2/18/66		
VEH DES INT	2/21		
STRUCTURE	2/17/66	PROJ ENGR	3/15/66
STRUCTURE	2/17	REL GROUP	3/16/66
WEIGHTS	3/10		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

WEB
DESCENT STAGE-SCIENTIFIC EQUIP.
SPT UPPER DECK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17289	B
SCALE NONE		SHEET 1.00 OF 4	

VG 77.1 9-64

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10						LEO-280-78	ADDED SH 1.10 SH 10F4 WAS 1 OF 3 IN MOD. BLK FOR ALL DASH NO'S: REMOVED LTA-3, LEM-2 THRU LEM-6 AND REVISED N/A. WAS LDW280-23575.	LTA,-3,5-8 LEM-2,-3,-4 -5 & -6		✓	E.ERICKSON 5-13-66		
	2	1.00, 1.10 2.00, 3.00						E.O.A2 (R)	ADDED -13. REVISED NOTE 2 TO INCLUDE WEIGHT OF -13	LTA-3, LEM-2, -3,-4,-5 & -6	NOT	REQ'D.	&		
B	1	1.00, 1.10 2.00, 3.00						E.O.B1	ADDED -15 TO FLD, B/M & MOD/BLK. REMOVED REQUIREMENTS FOR -13 FOR LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35) & LEM-6(36). ADDED NOTE 4	LEM-2,-3, -4,-5 & -6		✓	A.STEIN 8-11-66		
	2	1.10, 3.00						LEO-280-163	IN NOTE 4 REVISED LIMITS WAS 0.26 TO 0.38	LEM-2-3,-4, -5 & -6	✓	–			
	3	1.10, 3.00						LEO-280-187 (2)	IN FLD REVISED NOTE 4	LEM-2,-3,-4 -5 & -6	NOT	REQD RL			

FOR CONTINUATION OF REVISIONS SEE SHEET _____

ENG 77.3 5-66

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17289	B
SCALE NONE		SHEET 1.10	

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17289-15	E	WEB	AL ALLOY SH	QQ-A-250/12	7075-T6	.020 x 26 5/8 x 58 1/4	CM	SEE NOTE 4	
		LDW280-17289-13	E	WEB	AL ALLOY SH	QQ-A-250/12	7075-T6	.020 x 26 5/8 x 58 1/4	CM	88	
		LDW280-17289-11	E	WEB	AL ALLOY SH	QQ-A-250/12	7075-T6	.020 X 26 5/8 X 58 1/4	CM	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
CM	CHEM-MILLING	LSP14-26100
88	ANODIZE	LSP14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YOR

SIZE	CODE IDENT NO.	
B	26512	LDW280-17289

SCALE NONE SHEET 2.00

B

ENG 77.2 7-65

01

NAS 9-1100

LDW280-17289 SH3

8 7 6 5 4

C B A

-Y 81.000 (REF)
-Z 41.683 (REF)
SCIENTIFIC EQUIP BAY OUTBD REF PLANE

CHEM-MILL LINE FOR -11 ONLY

.006 (REF)
.006 (REF)
.020 (REF)

.020 (REF)
.006 (REF)

.006 (REF)
.020 (REF)
.010 (REF)

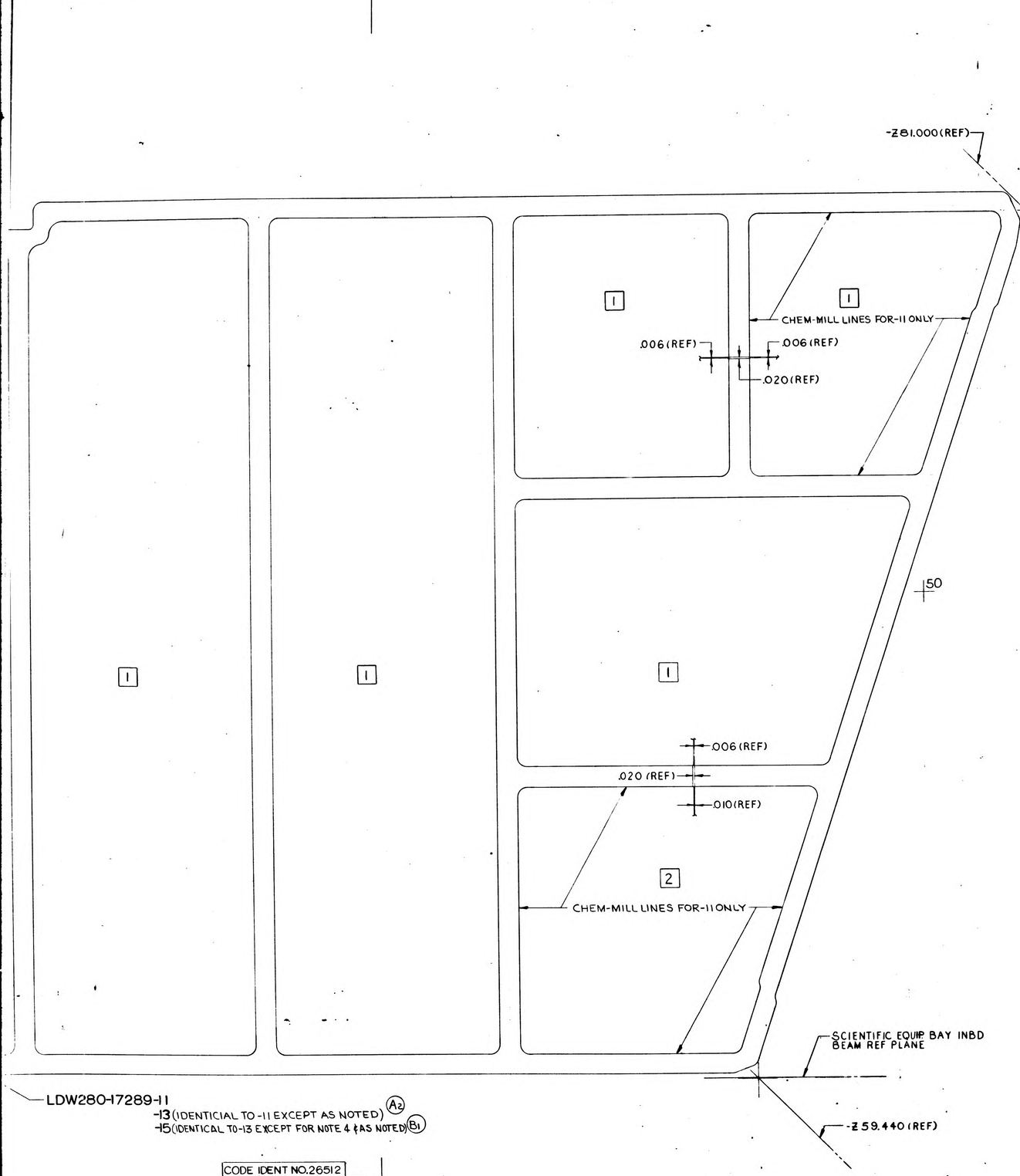
CHEM-MILL LINE FOR -11 ONLY

SCIENTIFIC EQUIP BAY INBD BEAM REF PLANE
-Y 59.594 (REF)

LDW280-17289-11
-13 (IDENTICIAL TO -11 EXCEPT AS NOTED) (A2)
-15 (IDENTICAL TO -13 EXCEPT FOR NOTE 4 & AS NOTED) (B1)

011 012 NAS 9-1100

CODE IDENT NO. 26512	
LDW280-17289	SH 3



NOTES:

1. NO TOOLING HOLES PERMITTED IN PART.
2. WEIGHT OF -11 CHEM MILL WEB AFTER FINAL TRIM (BUT BEFORE FASTENER HOLES ARE DRILLED) SHALL NOT EXCEED .226 POUNDS.
   WEIGHT OF -13 CHEM MILL WEB AFTER FINAL TRIM (BUT BEFORE FASTENER HOLES ARE DRILLED) SHALL NOT EXCEED 1.18 POUNDS
3. THICKNESS OF RAW MATERIALS BEFORE ETCH SEQUENCE SHALL BE .020 ± .003 THICKNESS SHALL NOT VARY BY MORE THAN .003 TOTAL OVER ENTIRE SHEET.
4. a) DEOXIDIZE IN ACCORDANCE WITH LSP-14-7020 EXCEPT THAT IN PARA 3.3 ONLY THE "HEAVY DUTY ALUMINUM DE-OXIDIZER SOLUTION" (NITRIC ACID - SODIUM SULFATE) SHALL BE USED & THE TOTAL IMMERSION TIME SHALL BE AS SPECIFIED IN d) BELOW.
   b) CHROMIC ACID ANODIZE IN ACCORDANCE WITH LSP-14-9030 EXCEPT THAT REQUIREMENTS CONCERNING ANODIC FILM WGT AND/OR CORROSION RESISTANCE SHALL NOT APPLY. THE TOTAL ANODIZING CYCLE TIME, INCLUDING VOLTAGE RUN-UP SHALL BE AS SPECIFIED IN d) BELOW.
   c) EMMITANCE MEASUREMENTS SHALL BE TAKEN ON BOTH SURFACES OF A FINISHED PART AND WITH A GIER-DUNKEL PORTABLE EMISSOMETER. THE SURFACES OF THE FINISHED PART SHALL HAVE AN AVERAGE TOTAL HEMISPHERICAL EMMITANCE OF 0.40 ±0.10 @ 100°F.
   d) PARTS WHOSE ENTIRE SURFACE AREA HAS BEEN "FLASH ETCHED" IN A CHEM-MILLING BATH SHALL BE DEOXIDIZED FOR 5 ± ½ MIN & THEN CHROMIC ACID ANODIZED FOR 38 ± ½ MINUTES.
   PARTS WHOSE SURFACE CONSISTS OF CHEM-MILLED & "AS ROLLED" SURFACES SHALL BE BE DEOXIDISED FOR 15 ± 1 MIN & THEN "CHROMIC ACID ANODIZED FOR 38 ± ½ MIN.
   PARTS WHOSE ENTIRE SURFACE AREA IS IN THE "AS ROLLED" COND SHALL BE DEOXIDIZED FOR 15 ± 1 MIN & THEN CHROMIC ACID ANODIZED FOR 38 ± ½ MIN.
   PARTS THAT HAVE BEEN ANODIZED & POSSESS SURFACE EMMITANCE PROPERTIES OUTSIDE THE REQD TOLERANCE MAY BE REWORKED BY DEOXIDIZING FOR 35-45 MIN & THEN CHROMIC ACID ANODIZING FOR 38 ± ½ MIN.

LDW280-17289-11

CHEM-MILL LINE TOLERANCE: ± 1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ± 1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040		
SYMBOL	THICKNESS AFTER CHEM-MILLING	* DEPTH OF CUT
1	$.006^{+.002}_{-.002}$	.014(REF)
2	$.010^{+.002}_{-.002}$	.010(REF)

LDW280-17289-13 & -15

CHEM-LINE TOLERANCE: ± 1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ± 1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040		
SYMBOL	THICKNESS AFTER CHEM-MILLING	* DEPTH OF CUT
1	$.006^{+.002}_{-.002}$	.014(REF)

LDW280-17289-11
-13 (IDENTICAL TO -11 EXCEPT AS NOTED) (A2)
-15 (IDENTICAL TO -13 EXCEPT FOR NOTE 4 & AS NOTED) (B1)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ~~DO NOT SCALE DRAWING~~	√
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2.3 XMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
250 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL F "ENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	√

DWG SIZE 34 X 62
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36 X 62) = 21.50 FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 5.25 SQ. FT.
PRINT TRIM LINE

LDW280-17289 B

0202 NAS 9-1100

CODE IDENT NO. 26512		
LDW280-17289	SH 3	

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LEM	SIZE J	CODE IDENT NO. 26512	LDW280-17289 B
MODEL OR END ITEM	SCALE FULL		SHEET 3.00

FOR PHOTO REPRODUCTION K2

12-28-67

ENG 22.2 REV 2-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A 5132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

LCD19-1242 2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	DESCRIPTION OF EO	GAEC EO RELEASE
		✓	IN M/B FOR * ADDED LTA-3DR EFF	JK 4/4/67

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R	(46)

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
/		NOT REQD	5

APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGR	PROJ ENGR
[illegible]	4/28/67			5/5/67	4/26/67	3-30-67	4/26/67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 541

ISSUED BY G. BECKER/J. STAKOSCH X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

NO 32.2 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO 280		EO NO. 711
CONTROL INFO NO. LDW280A8642		

FOR THE FOLLOWING DRAWINGS (ALL DASH NO.)
REMOVE LM-4(34) THRU LM-15(45) EFFECTIVITY

DWG N°	CHG NO.	TITLE
LDW280-23566	B6	SEE DWG
LDW280-23569	B7	
LDW280-23575	C4	
LDW280-23576	D1	
LDW280-23577	B2	
LDW280-23586	B8	
LDW280-23593	B4	
LDW280M17272	B3	
LDW280M17606	B7	
LDW280M17607	B2	
LDW280M17700	B3	
LDW280M17268	C3	
LDW280M17625	B2	
LDW280M17626	B4	
LDW280M17605	B1	
LDW280-17291	B3	
LDW280-17711	C4	
LDW280-17290	B3	
LDW280-17289	C3	
LDW280-17879	B1	
LDW280-17739	B10	
LDW280-17881	B1	
LDW280-18219	B4	
LDW 280-17091	A4	
LDW280-17708	B3	SEE DWG

NAS 9-1100

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 1433 CCA 586	3

REASON FOR EO: REDESIGN FOR ALSEP

DESCRIPTION OF EO: ON - * REMOVED LM-4(34) THRU LM-15(45) EFFECTIVITY

GAEC EO RELEASE: JK 9/13/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4(34)	
		THRU	
LM		LM-15(45)	

DRAWING CHANGE REQD: ✓ REVISE DWG; RECORD EO
DISPOSITION OF PARTS: REWORK; ✓ SCRAP

APPROVED BY									
DATE	9/11/67	VDI	SUPPORT	RELIAB GROUP	9/11/67 GROUP LEADER	9/12/67 STRESS GROUP	LIAISON ENGRG	9/12/67 PROJ ENGRG	9-13-67

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 711

9/20 ISSUED BY F MADDEN / J. STRAKOSCH
SECTION VEHICLE DESIGN INT GROUP NO. 335 PL 25

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO280		EO NO. 763
CONTROL INFO NO. LDW280A9814		

REMOVE LTA-3(13) EFFECTIVITY FROM ALL DASH NOS. (*) OF THE FOLLOWING DWGS:

DWG. NO.	N/A	TITLE	CHG. NO.	DWG. NO.	N/A	TITLE	CHG. NO.
LDW280-23569	LDW280-23510	SEE DWG.	B8	LDW280-17714	LDW280-23575	SEE DWG.	C4
-23576	-23569		D2	M17266	-23575		C4
-23577	-23569		B3	-23566	-23509		B9
-23575	-23569		C5	-17879	-23566		B2
-23578	-23569		B9	-17891	-23586		A5
-23586	-23569		B9	-17708	-23586		B4
M17272	-23569		B4	-17739	-23586		C1
-17290	-23576		B4	-23593	-23509		B5
-17711	-23576		C6	-17719	-23634		B4
-17792	-23576		B7	-17878	-23566		B2
-17716	-23576		B4	-17881	-23566		B2
M17606	-23576		B8	M17625	-23566		B3
M17607	-23576		B3	M17626	-23566		B5
				LDW280-17884	LDW280-23579	SEE DWG.	B4
-17291	-23577		B4				
-17296	-23577		B4				
-17713	-23577		C4				
-17715	-23577		B4				
M17629	-23575		B2				
M17605	-23575		B2				
-17712	-23575		A5				
-17294	-23575		B4				
M17640	-23575		B6				
LDW280-17289	LDW280-23575		C4				

NAS 9-1100

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD1433 CCA 586	GAEC EO RELEASE
REASON FOR EO					DESCRIPTION OF EO	
PARTS NOT REQ'D.					REMOVE LTA-3(13) EFFECTIVITY FROM - *	

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
LM		LTA-3(13)		✓			✓	D	10/20/67	VDI		10/20/67	10/24/67	10/26/67	10/26/67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO280	763

ISSUED BY 10/27 E. RANSOM X7033 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

LEM	LDW280-25576	LEM-6(36)	1
LEM	LDW280-25576	LEM-5(35)	1
LEM	LDW280-25576	LEM-4(34)	1
LEM	LDW280-25576	LEM-3 (33)	1
LEM	LDW280-25576	FWD-2 (32)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17290-15

LEM	LDW280-23576	LTA-3(13	
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17290-13

LEM	LDW280-25576	LEM-1 (31)	1
LEM	LDW280-25576	LTA-8 (18)	1
LEM	LDW280-25576	LTA-5 (15)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17290-11

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00						
REV	A	A	A	A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED

LAST DASH NO. USED -15

GRUMMAN REL INFO A

PRIM NO. 207 MP 9/19/66 A EMF 3-21-67 RS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
$\pm 1/32$ $\pm .020$ $\pm 1/2°$

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 LINE ITEM * 1 DOCUMENTATION TYPE II

DRAWN BY	T. MACAULAY 1-27-66	RELIABILITY	
LAYOUT BY	G. KOURY 2-4-66		
CHECKED BY	GBH 3-3-66		
GR LEADER	3/3/66		
VEH DES INT	3/3/66		
STRUCTURE	LEP 3/30	PROJ ENGR	4-4-66
STRUCTURE	3/3	REL GROUP	4-4-66
WEIGHTS	6/1		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

WEB
DESCENT STAGE - SCIENTIFIC EQUIP BAY
LOWER DECK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17290	A

SCALE NONE SHEET 1.00 OF 4

ENG 77.1 9-64

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	~~GOVT~~ APPD
A	1	1.00, 1.10, 2.00, 3.00						EO A1	SH 1.00 OF 4 WAS SH 1.00 OF 3 ADDED SH 1.10. ADDED -13 N/A LDW280-23576 EFFECTIVE FOR LTA-3 (13), LEM-2 (32), LEM-3(33), LEM-4(34), LEM-5 (35) & LEM-6 (36). ADDED NOTE 5	LTA-3, LEM-2, -3, -4, -5, -6	NOT	REQD			
	2	1.10, 3.00						EO A2	IN FLD IN NOTE 5 FOR -13 ADDED 2.38 POUNDS. IN NOTE 2 FOR -11 ADDED 2.42 POUNDS.	LTA-3, 5, 8, LEM-1, 2, -3, -4, -5, -6					
	3	1.10, 3.00						EO A3	FOR -13 IN ZONE 6B 7 1/16 DIM WAS 6 13/16 (EXTENDED SLOT)	LTA-3, LEM-2, -3, -4, -5, -6	✓				
	4	1.00, 1.10, 2.00, 3.00					✓	EO A4	ADDED LDW280-17290-15 TO FLD, B/M, & MOD/BLK REMOVED REQTS FOR LDW280-17290-13 FOR LEM-2(32), LEM-3(33), LEM-4 (34), LEM-5(35), & LEM-6 (36) ADDED NOTE 6.	LEM-2, -3, -4, -5, -6		✓			
	5	1.10, 3.00					✓	LEO 280-163	IN NOTE 6 REVISED LIMITS WAS .026 TO .038.		✓				
	6	1.10, 3.00					✓	LEO 280-187	IN FLD REVISED NOTE 6		NOT	REQD			
	7	1.10, 3.00						Ⓒ	REF LEO 280-187 REMOVED NOTE 6 ADDED NOTE 7 IRB	NOT REQD	NOT	REQD	T. FREDA 8-21-66		

CHG APPROVED	LTR	~~GROUP LDR~~	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
	A		JHS 9/6/66	TK wjw 8/31/66			

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17290	A

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17290-15	E	WEB	AL ALLOY SH	QQ-A-250/12	7075-T6	.056 x 25 7/8 x 58 3/4	CM	SEE NOTE 7	6B
		LDW280-17290-13	E	WEB	AL ALLOY SH	QQ-A-250/12	7075-T6	.056 x 25 7/8 x 58 3/4	CM	88	6B
		LDW280-17290-11	E	WEB	AL ALLOY SH	QQ-A-250/12	7075-T6	.056 x 25 7/8 x 58 3/4	CM	88	6B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP-14-9030
CM	CHEM-MILL	LSP-14-26100

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17290	A

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

C

B

A

-Y27.000 (REF)

-Z 81.000 (REF)

.020 (REF)

.032 (REF)

CHEM-MILL LINE

A1

2 (-11 ONLY)

.008 (REF)

1 (-13½-15)

CHEM-MILL LINE

.032 (REF)

1

.006 (REF)

CHEM-MILL LINE

4

.020 (REF)

.032 (REF)

SEE NOTE *4

1

.032 (REF)

.006 (REF)

.016 (REF)

CHEM-MILL LINE (-11 ONLY)

CHEM-MILL LINE (-13-15)

A1

CHEM-MILL LINE

CUTOUT AS SHOWN (-11 ONLY)

CHEM-MILL

LDW28

.056 (REF)

.032 (REF)

SEE NOTE *4

CHEM-MILL LINE

A1

1 (-11 ONLY)

2 (-13½-15)

.006 (REF) (TYP)

CHEM-MILL LINE

1

.032 (REF) (TYP)

.006 (REF) (TYP)

CHEM-MILL LINE

1

CHEM-MILL LINE

1

CHEM-MILL (-11 ONLY)

.032 (REF)

CUTOUT AS SHOWN (-11 ONLY)

A1

.056 (REF)

CHEM-MILL LINE (-11 ONLY)

CHEM-MILL LINE (-13½-15)

A1

A3

.032 (REF)

.032 (REF)

TRIM (-13

CHEM-M

CHEM-MILL LINE (-13½-15)

.020 (REF)

.020 (REF)

.032 (REF)

.020 (REF)

CHE

A1

(-11)

4

(-13½-15) (2

1

4

4

4

TRIM (-11)

CHEM-MILL LINE (-13½-15)

TRIM (-13

TRIM (-11)

TRIM (-13½-15)

4 REF

01/03

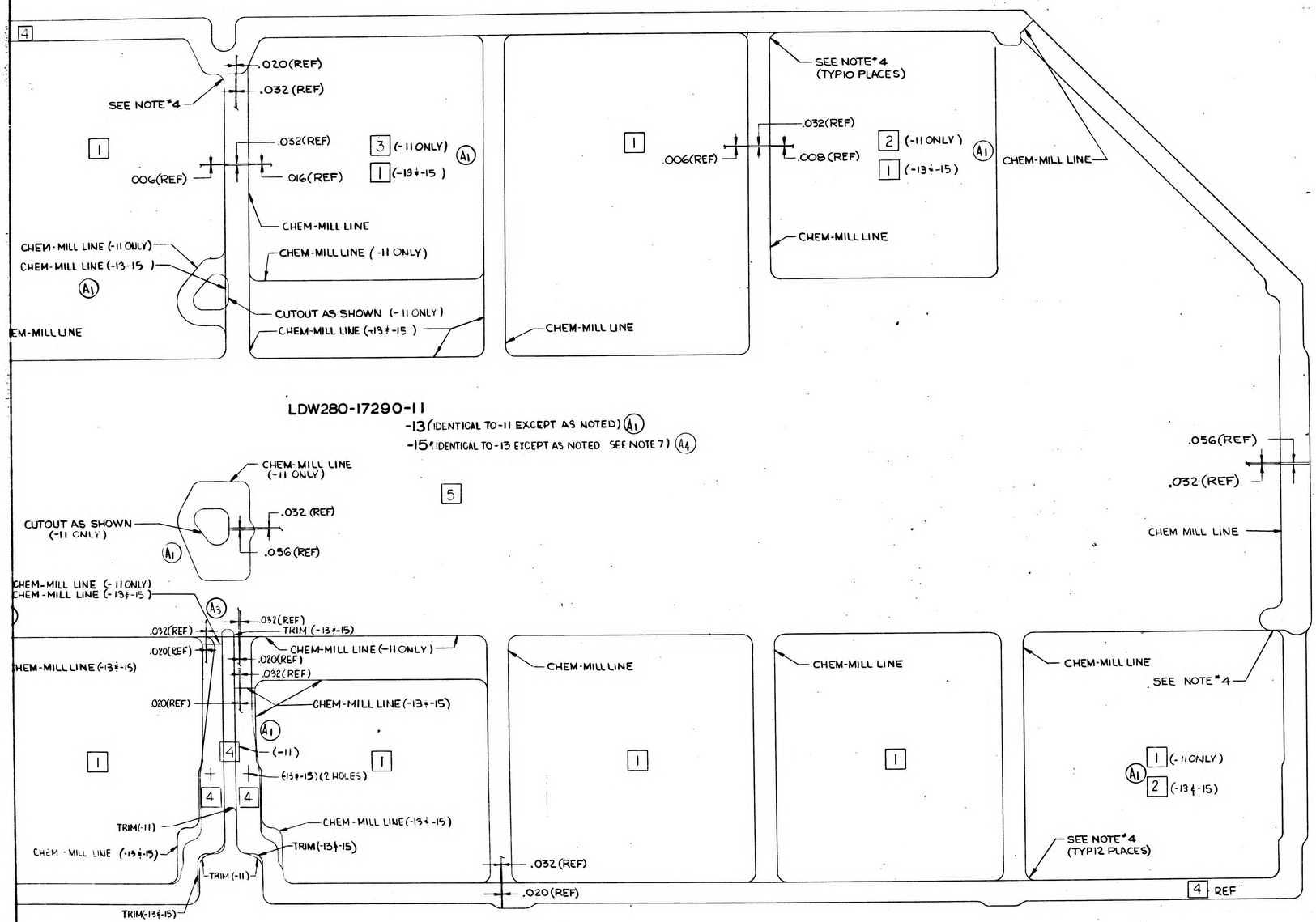
NAS 9-1100

CODE IDENT NO. 26512

LDW280-17290

SH 3

NOTES :
1. NO TOOLING HOLES PERMITTED IN PART
2. WEIGHT OF -11 CHEM-MILL WEB AFTER FINAL TRIM (BUT BEFORE FASTENER HOLES ARE DRILLED) SHALL NOT EXCEED 2.42 POUNDS
3. THICKNESS OF RAW MATERIAL BEFORE ETCH SEQUENCE SHALL BE .056 ±.003. THICKNESS SHALL NOT VARY BY MORE THAN .003 TOTAL OVER ENTIRE SHEET.
4. TOLERANCE ±.125 AT TANGENCY POINTS OF CHEM-MILL LINE CORNER RADII BETWEEN TWO ETCHED SURFACES.
5. WEIGHT OF -13 CHEM-MILL WEB AFTER FINAL TRIM (BUT BEFORE FASTENER HOLES ARE DRILLED) SHALL NOT EXCEED 2.38 POUNDS.
6. EMITTANCE MEASUREMENTS SHALL BE TAKEN ON BOTH SURFACES OF THE WEB WITH A GIER-DUNKLE PORTABLE EMISSOMETER. THE TOTAL HEMISPHERICAL EMITTANCE AT 100°F SHALL BE .026 TO .050
7. DEOXIDIZE IN ACCORDANCE WITH LSP-14-7020 EXCEPT THAT IN PARA 3.3 ONLY THE HEAVY-DUTY ALUMINUM DEOXIDIZER SOLUTION (NITRIC ACID SODIUM SULFATE) SHALL BE USED AND THE TOTAL IMMERSION TIME SHALL BE AS SPECIFIED IN (D) BELOW.
8. CHROMIC ACID ANODIZE IN ACCORDANCE WITH LSP-14-9030 EXCEPT THAT REQTS CONCERNING ANODIC FILM WGT AND/OR CORROSION RESISTANCE SHALL NOT APPLY. THE TOTAL ANODIZING CYCLE TIME, INCLUDING VOLTAGE RUN-UP SHALL BE AS SPECIFIED IN (D) BELOW.
9. EMMITANCE MEASUREMENTS SHALL BE TAKEN ON BOTH SURFACES OF A FINISHED PART AND WITH A GIER-DUNKLE PORTABLE EMISSOMETER. THE SURFACES OF THE FINISHED PART SHALL HAVE AN AVERAGE TOTAL HEMISPHERICAL EMITTANCE OF 0.40 ± 0.10 @ 100°F.
10. (a) PARTS WHOSE ENTIRE SURFACE AREA HAS BEEN "FLASH ETCHED" IN A CHEM-MILLING BATH SHALL BE DEOXIDIZED FOR 5 ± 1/2 MIN ± THEN CHROMIC ACID ANODIZED FOR 38 ± 1/2 MINUTES.
(b) PARTS WHOSE SURFACE CONSISTS OF CHEM-MILLED ± "AS ROLLED" SURFACES SHALL BE DEOXIDIZED FOR 15 ± 1 MINUTES ± THEN CHROMIC ACID ANODIZED FOR 38 ± 1/2 MIN.
(c) PARTS WHOSE ENTIRE SURFACE IS "AS ROLLED" COND SHALL BE DEOXIDIZED FOR 15 ± 1 MINUTES ± THEN CHROMIC ACID ANODIZED FOR 38 ± 1/2 MIN.
(d) PARTS THAT HAVE BEEN ANODIZED ± POSSESS SURFACE EMITTANCE PROPERTIES OUTSIDE THE REQUIRED TOLERANCE MAY BE REWORKED BY DEOXIDIZING FOR 35-45 MIN ± THEN CHROMIC ACID ANODIZING FOR 38 ± 1/2 MIN.



A1 A4

LDW280-17290-11-13-15

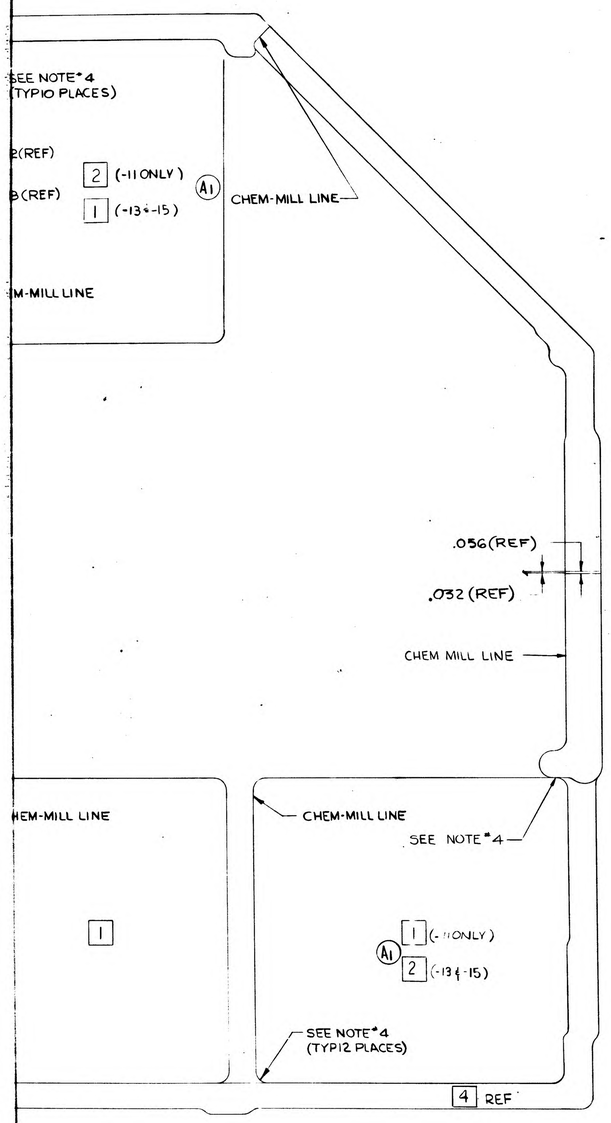
CHEM-MILL LINE TOLERANCE: ± 1/64 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ± 1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040		
SYMBOL	THICKNESS AFTER CHEM-MILLING	* DEPTH OF CUT
1	.006 ± .002	.050 (REF)
2	.008 ± .002	.048 (REF)
3	.016 +.003 −.002	.040 (REF)
4	.020 ± .003	.036 (REF)
5	.032 +.004 −.003	.024 (REF)

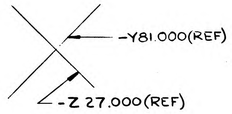
02/03 NAS 9-1100

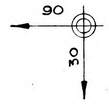
CODE IDENT NO. 26512 | LDW280-17290 | SH 3

CODE IDENT NO. 26512 | LDW280-17290 | SH 3

NOTES :
1. NO TOOLING HOLES PERMITTED IN PART
2. WEIGHT OF -11 CHEM-MILL WEB AFTER FINAL TRIM (BUT BEFORE FASTENER HOLES ARE DRILLED) SHALL NOT EXCEED 2.42 POUNDS
3. THICKNESS OF RAW MATERIAL BEFORE ETCH SEQUENCE SHALL BE .056 ±.003 . THICKNESS SHALL NOT VARY BY MORE THAN .003 TOTAL OVER ENTIRE SHEET.
4. TOLERANCE ±.125 AT TANGENCY POINTS OF CHEM-MILL LINE CORNER RADII BETWEEN TWO ETCHED SURFACES.
5. WEIGHT OF -13 CHEM-MILL WEB AFTER FINAL TRIM (BUT BEFORE FASTENER HOLES ARE DRILLED) SHALL NOT EXCEED 2.28 POUNDS.
6. EMITTANCE MEASUREMENTS SHALL BE TAKEN ON BOTH SURFACES OF THE WEB WITH A GIER-DUNKLE PORTABLE EMISSOMETER. THE TOTAL HEMISPHERICAL EMITTANCE AT 100°F SHALL BE .026 TO .050
7. DEOXIDIZE IN ACCORDANCE WITH LSP-14-7020 EXCEPT THAT IN PARA 33 ONLY THE HEAVY-DUTY ALUMINUM DEOXIDIZER SOLUTION (NITRIC ACID-SODIUM SULFATE) SHALL BE USED AND THE TOTAL IMMERESION TIME SHALL BE AS SPECIFIED IN (D) BELOW.
8. CHROMIC ACID ANODIZE IN ACCORDANCE WITH LSP-14-9030 EXCEPT THAT REQTS CONCERNING ANODIC FILM WGT AND/OR CORROSION RESISTANCE SHALL NOT APPLY. THE TOTAL ANODIZING CYCLE TIME, INCLUDING VOLTAGE RUN-UP SHALL BE AS SPECIFIED IN (D) BELOW.
9. EMITTANCE MEASUREMENTS SHALL BE TAKEN ON BOTH SURFACES OF A FINISHED PART AND WITH A GIER-DUNKLE PORTABLE EMISSOMETER. THE SURFACES OF THE FINISHED PART SHALL HAVE AN AVERAGE TOTAL HEMISPHERICAL EMITTANCE OF 0.40 ± 0.10 @ 100°F.
10. PARTS WHOSE ENTIRE SURFACE AREA HAS BEEN "FLASH ETCHED" IN A CHEM-MILLING BATH SHALL BE DEOXIDIZED FOR 5 ± 1/2 MIN & THEN CHROMIC ACID ANODIZED FOR 38 ± 1/2 MINUTES.
PARTS WHOSE SURFACE CONSISTS OF CHEM-MILLED & "AS ROLLED" SURFACES SHALL BE DEOXIDIZED FOR 15 ± 1 MINUTES & THEN CHROMIC ACID ANODIZED FOR 38 ± 1/2 MIN.
PARTS WHOSE ENTIRE SURFACE IS "AS ROLLED" COND SHALL BE DEOXIDIZED FOR 15 ± 1 MINUTES & THEN CHROMIC ACID ANODIZED FOR 38 ± 1/2 MIN.
PARTS THAT HAVE BEEN ANODIZED & POSSESS SURFACE EMITTANCE PROPERTIES OUTSIDE THE REQUIRED TOLERANCE MAY BE REWORKED BY DEOXIDIZING FOR 35-45 MIN & THEN CHROMIC ACID ANODIZING FOR 38 ± 1/2 MIN.







A1 A4

LDW 280-17290-11-13-15

CHEM-MILL LINE TOLERANCE: ± 1/16" HERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ± 1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040		
SYMBOL	THICKNESS AFTER CHEM-MILLING	* DEPTH OF CUT
1	.006 ± .002	.050 (REF)
2	.008 ± .002	.048 (REF)
3	.016 $^{+.003}_{-.002}$	.040 (REF)
4	.020 ± .003	.036 (REF)
5	.032 $^{+.004}_{-.003}$	.024 (REF)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	√
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
250 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ⚡ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS 1/32	√

DWG SIZE 34 X 106
PRINTING INFO ONLY
FULL SIZE SHEET AREA OR 27.0 SQ. FT.
1/2 SIZE SHEET AREA (1/4 OF FULL) = 6.75 SQ. FT.
PRINT TRIM LINE

03703 NAS 9-1100

	R. GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LEM	SIZE J	CODE IDENT NO 26512	LDW280-17290	R A
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

CODE IDENT NO. 26512 | LDW280-17290 | SH 3

FOR PHOTO REPRODUCTION

LDW280-17290 A
LDW280-17290 A
LDW280-17290 A

K2

ENG 32.2 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 541
CONTROL INFO NO. LDW280A5132

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG: /

LCD19-1242 (B) 2 C

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R (46)	

DRAWING CHANGE REQD: REVISE DWG /; RECORD EO
DISPOSITION OF PARTS: REWORK NOT; SCRAP REQD
APPROVED BY: DATE 3/20/67
5 YDI
SUPPORT | RELIAB GROUP | GROUP LEADER 3/8/67 | STRESS GROUP 3/9/67 | LIAISON ENGR | PROJ ENGRG 3.30.67 4/4/67

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 541

ISSUED BY G. BECHER/J. STARKSEN X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

NO 32.2 REV 3-65

ENGINEERING ORDER

DWG. NO.	LEO 280		EO NO.	711
CONTROL INFO NO.	LDW280A8642			

FOR THE FOLLOWING DRAWINGS (ALL DASH NO.*)
REMOVE LM-4(34) THRU LM-15(45) EFFECTIVITY

DWG N° *	CHG NO.	TITLE
LDW280-23566	B6	SEE DWG
LDW280-23569	B7	
LDW280-23575	C4	
LDW280-23576	D1	
LDW280-23577	B2	
LDW280-23586	B8	
LDW280-23593	B4	
LDW280M17272	B3	
LDW280M17606	B7	
LDW280M17607	B2	
LDW280M17700	B3	
LDW280M17268	C3	
LDW280M17625	B2	
LDW280M17626	B4	
LDW280M17605	B1	
LDW280-17291	B3	
LDW280-17711	C4	
LDW280-17290	B3	
LDW280-17289	C3	
LDW280-17879	B1	
LDW280-17739	B10	
LDW280-17881	B1	
LDW280-18219	B4	
LDW280-17891	A4	
LDW280-17708	B3	SEE DWG

NAS 9-1100

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCR 1433 CCA 586	3
REASON FOR EO: REDESIGN FOR ALSEP					DESCRIPTION OF EO: ON - * REMOVED LM-4(34) THRU LM-15(45) EFFECTIVITY	(10) GAEC EO RELEASE: JK 9/12/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4(34)	
		THRU	
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
			✓

APPROVED BY									
DATE	9/11/67			9/11/67	9/12/67		9/12/67	9/12/67	9-13-67
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO 280	711

9/20 ISSUED BY F MADDEN / J. STRAKOSCH SECTION VEHICLE DESIGN INT GROUP NO. 335 PL 25

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 *

ENGINEERING ORDER

DWG. NO.	LE0280	-	EO NO. 763
CONTROL INFO NO.	LDW280A9814		

REMOVE LTA-3(13) EFFECTIVITY FROM ALL DASH NOS. (*) OF THE FOLLOWING DWGS:

DWG. NO.	N/A	TITLE	CHG. NO.	DWG. NO.	N/A	TITLE	CHG. NO.
LDW280-23569	LDW280-23510	SEE DWG.	B8	LDW280-17714	LDW280-23575	SEE DWG.	C4
-23576	-23569	↕	D2	M17266	-23575	↕	C4
-23577	-23569		B3	-23566	-23509		B9
-23575	-23569		C5	-17879	-23566		B2
-23578	-23569		B9	-17891	-23586		A5
-23586	-23569		B9	-17708	-23586		B4
M17272	-23569		B4	-17739	-23586		C1
-17290	-23576		B4	-23593	-23509		B5
-17711	-23576		C6	-17719	-23634		B4
-17792	-23576		B7	-17878	-23566		B2
-17716	-23576		B4	-17881	-23566		B2
M17606	-23576		B8	M17625	-23566		B3
M17607	-23576		B3	M17626	-23566		B5
				LDW280-17884	LDW280-23579	SEE DWG.	B4
-17291	-23577		B4				
-17296	-23577		B4				
-17713	-23577		C4				
-17715	-23577		B4				
M17629	-23575		B2				
M17605	-23575		B2				
-17712	-23575		A5				
-17294	-23575		B4				
M17640	-23575		B6				
LDW280-17289	LDW280-23575		C4				

(P) 5

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG ✓	LCD1433	CCA 586

REASON FOR EO: PARTS NOT REQ'D.

DESCRIPTION OF EO: REMOVE LTA-3(13) EFFECTIVITY FROM - *

GAEC EO RELEASE: JK 10/26/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO. (EFFECTIVITY)	SUB CONTR UNIT NO.	REVISE DWG	RECORD EO	REWORK	SCRAP
LM		LTA-3 (13)		✓			✓

PRIORITY: C

		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	[signature]			[signature]	W/JA		[signature]	[signature]
DATE	10/20/67			10/20/67	10/21/67		10/21/67	10-26-67
D	VDI							

DRAWING TITLE: NOTED
DRAWING NO.: LE0280
EO NO.: 763

10/27
ISSUED BY E. RANSOM X7033 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

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MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	
LEM	LDW280-23577	LEM-6(36)	1
LEM	LDW280-23577	LEM-5(35)	1
LEM	LDW280-23577	LEM-4(34)	1
LEM	LDW280-23577	LEM-3(33)	1
LEM	LDW280-23577	LEM-2(32)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17291-13		GAEC SCH NO.	
LEM	LDW280-25577	LEM-1(31)	1
LEM	LDW280-25577	LTA-8(18)	1
LEM	LDW280-25577	LTA-5(15)	1
LEM	LDW280-23577	LTA-3(13)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17291-11		GAEC SCH NO. 51-2	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00	1.10	2.00		3.00					
REV	A	A	A		A					
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED		GRUMMAN REL INFO	
LAST DASH NO. USED	-13	PRIM NO.	16001
		207	MP-A 8-18-6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100		LINE ITEM # 1	DOCUMENTATION TYPE II
DRAWN BY	MARTELLO 2/11/66	RELIABILITY	
LAYOUT BY	CINO 2-16-66		
CHECKED BY	EG 2-14-66		
GR LEADER			
VEH DES INT			
STRUCTURES	3/14/66	PROJ ENGR	3-24-66
STRUCTURES	3-17	REL GROUP	3-24
WEIGHTS	3/23		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

WEB
DESCENT STAGE-SCIENTIFIC EQUIP SPT
INBD BEAM

SIZE	CODE IDENT NO.		
B	26512	LDW280-17291	A
SCALE NONE		SHEET 1.00 OF 4	

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	QUAL APPD
A	1	1, & 1.10						LEO280-78	IN MOD. BLK. FOR ALL DASH NO'S REMOVED LTA-3, LEM-2 THRU LEM-6 & REVISED N/A WAS LDW280-23577. SHEET 1 OF 4 WAS SH. 1 OF 3 ADDED 1.10.	LTA-3-5,-8 LEM-1 THRU-6		✓	R. PRINZIVALLI 5-13-66		
	2	1, & 1.10						LEO280-105	IN MOD. BLK FOR ALL DASH NOS. ADDED LTA-3(13), LEM-2 (32) THRU LEM-6 (36) REQUIREMENTS	LTA-3, LEM-2 THRU -6	NOT	REQD	R. PRINZIVALLI 7-21-66		
	3	1, 1.10, 2 & 3					✓	E.O. A3	ADDED LDW280-17291-13 TO FLD, B/M & MOD/BLK REMOVED REQTS FOR LDW280-17291-11 FOR LEM-2 (32), LEM-3 (33), LEM-4 (34), LEM-5 (35) & LEM-6 (36) ADDED NOTE 4	LEM-2, -3, -4, -5 & -6		✓			
	4	1, 1.10, 3					✓	LEO280-163	IN NOTE #4 REVISED LIMITS WAS 0.26 TO 0.38	LEM 2 (32) THRU 6 (36)	✓		R. KLUGE 8-11-66		
	5							LEO280-187	IN FIELD REVISED NOTE #4		NOT	REQD			
	6								REF LEO-187, REMOVED NOTE 4 ADDED NOTE 5	LEM-2 THRU-6	NOT	REQD			

FOR CONTINUATION OF REVISIONS SEE SHEET _____

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

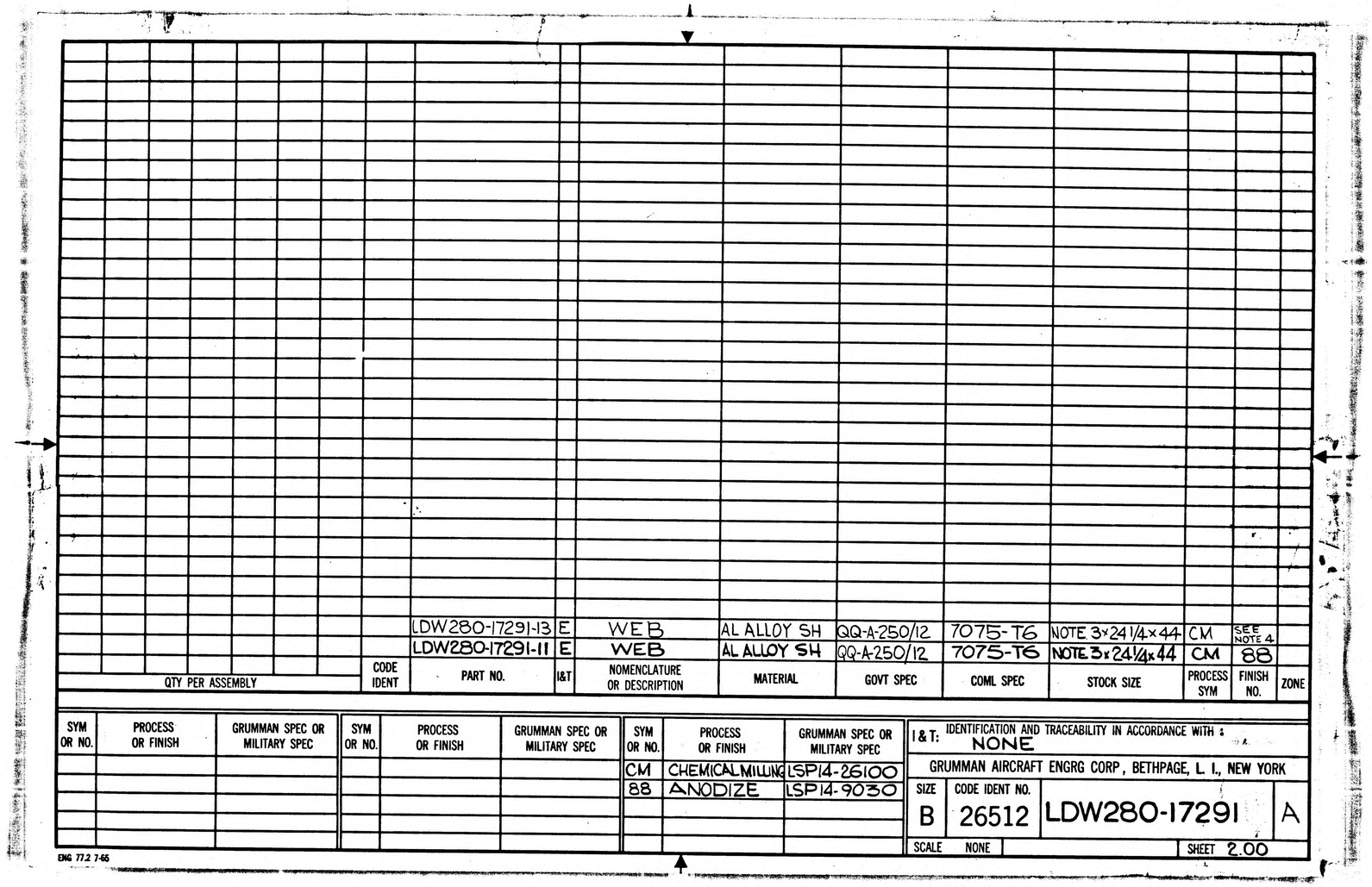
SIZE	CODE IDENT NO.		
B	26512	LDW280-17291	A

SCALE NONE | SHEET 1.10

ENG 77.3 5-66

01

NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17291-13	E	WEB	AL ALLOY SH	QQ-A-250/12	7075-T6	NOTE 3x24 1/4x44	CM	SEE NOTE 4	
		LDW280-17291-11	E	WEB	AL ALLOY SH	QQ-A-250/12	7075-T6	NOTE 3x24 1/4x44	CM	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
CM	CHEMICAL MILLING	LSP14-26100
88	ANODIZE	LSP14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

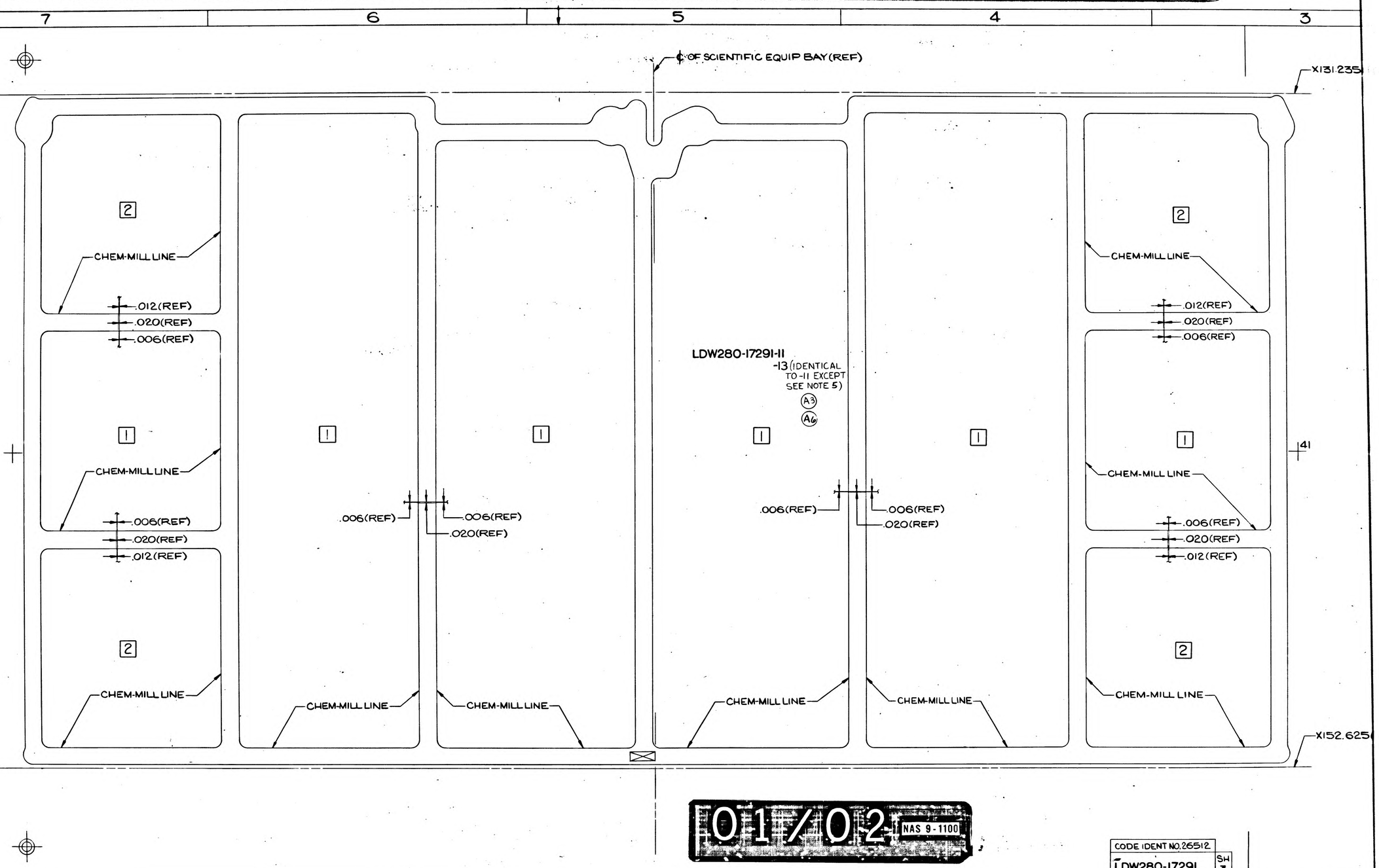
SIZE	CODE IDENT NO.		
B	26512	LDW280-17291	A

SCALE NONE SHEET 2.00

ENG 77.2 7-65

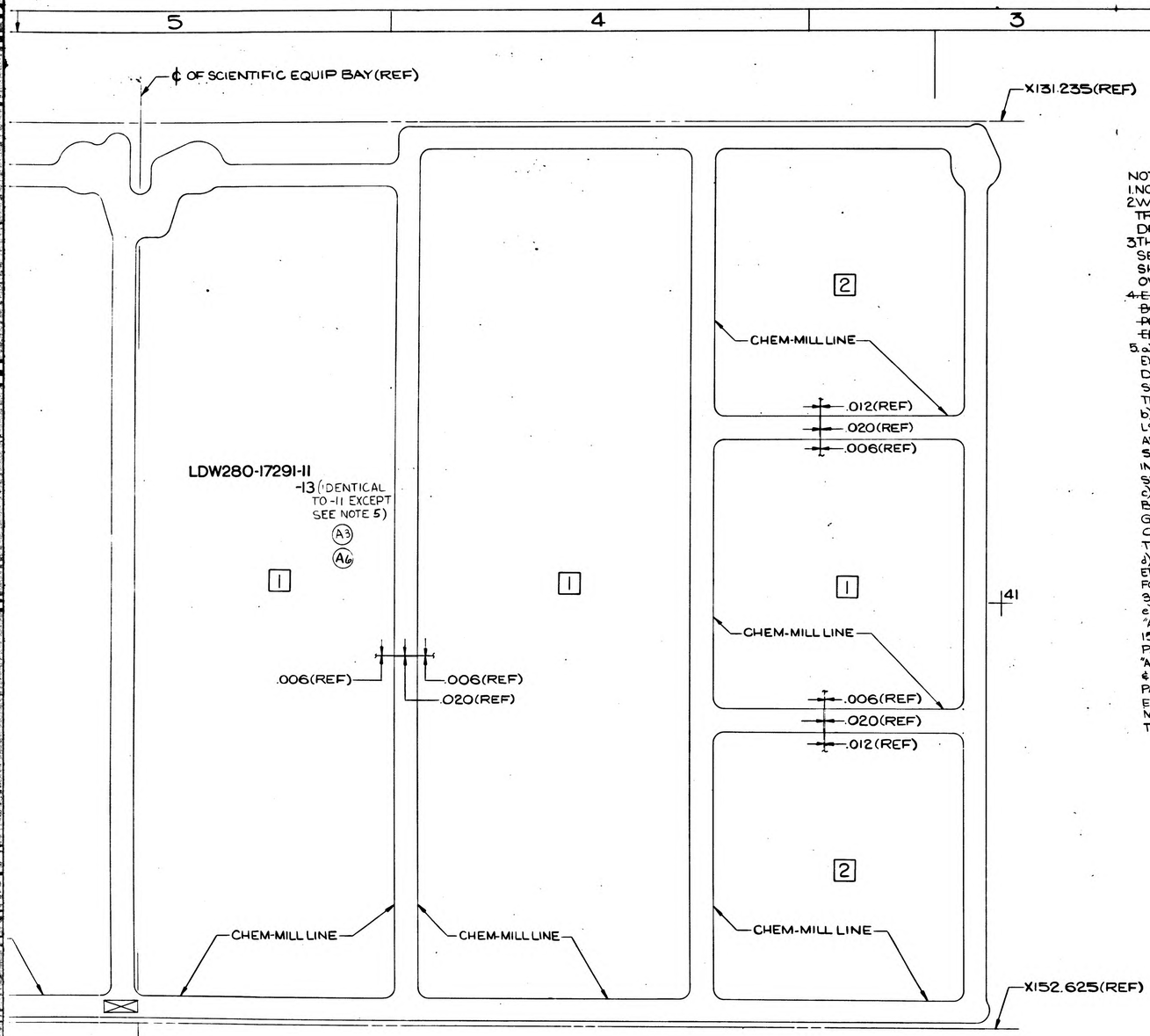
01

NAS 9-1100



01/02 NAS 9-1100

CODE IDENT NO. 26512
LDW280-17291
SH 3



NOTES

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. WEIGHT OF -11 CHEM-MILL WEB AFTER FINAL TRIM (BUT BEFORE FASTENER HOLES ARE DRILLED) SHALL NOT EXCEED 0.72 POUNDS.
3. THICKNESS OF RAW MATERIAL BEFORE ETCH SEQUENCE SHALL BE .020 ± .002. THICKNESS SHALL NOT VARY BY MORE THAN .002 TOTAL OVER ENTIRE SHEET.
4. ~~EMITTANCE MEASURMENTS SHALL BE TAKEN ON BOTH SURFACES OF THE WEB WITH A GIER DUNKLE PORTABLE EMISSOMETER. THE TOTAL HEMISPHERICAL EMITTANCE, AT 100°F SHALL BE 0.26 TO 0.50~~
5. a) DEOXIDIZE IN ACCORDANCE WITH LSP-14-7020 EXCEPT THAT IN PARA 3.3 ONLY THE "HEAVY-DUTY ALUM. DE-OXIDIZER SOLUTION" (NITRIC ACID-SODIUM SULFATE) SHALL BE USED AND THE TOTAL IMMERSION TIME SHALL BE AS SPECIFIED IN d) BELOW.
   b) CHROMIC ACID ANODIZE IN ACCORDANCE WITH LSP-14-9030 EXCEPT THAT REQTS CONCERNING ANODIC FILM WGT. AND/OR CORROSION RESISTANCE SHALL NOT APPLY. THE TOTAL ANODIZING CYCLE TIME INCLUDING VOLTAGE RUN-UP SHALL BE AS SPECIFIED IN d) BELOW.
   c) EMITTANCE MEASUREMENTS SHALL BE TAKEN ON BOTH SURFACES OF THE FINISHED PART AND WITH A GIER-DUNKEL PORTABLE EMISSOMETER THE SURFACES OF THE FINISHED PART SHALL HAVE AN AVERAGE TOTAL HEMISPHERICAL EMITTANCE OF .040 ± .010 @ 100°F
   d) PARTS WHOSE ENTIRE SURFACE AREA HAS BEEN "FLASH ETCHED" IN A CHEM MILLING BATH SHALL BE DEOXIDIZED FOR 5 ± ½ MIN & THEN CHROMIC ACID ANODIZED FOR 38 ± ½ MINUTES.
   e) PARTS WHOSE SURFACE CONSIST OF CHEM-MILLED & "AS ROLLED" SURFACES SHALL BE DEOXIDIZED FOR 15 ± 1 MIN. & THEN CHROMIC ACID ANODIZED FOR 38 ± ½ MIN. PARTS WHOSE ENTIRE SURFACE AREA IS IN THE "AS ROLLED" COND SHALL BE DEOXIDIZED FOR 15 ± 1 MIN & THEN CHROMIC ACID ANODIZED FOR 38 ± ½ MIN
   PARTS THAT HAVE BEEN ANODIZED & POSSESS SURFACE EMITTANCE PROPERTIES OUTSIDE THE REQD TOLERANCE MAY BE REWORKED BY DEOXIDIZING FOR 35-45 MIN. & THEN CHROMIC ACID ANODIZING FOR 38 ± ½ MIN

LDW280-17291-11 & -13

CHEM-MILL LINE TOLERANCE: ±1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED). ±1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040

SYMBOL	THICKNESS AFTER CHEM-MILLING	DEPTH OF CUT
1	.006 ±.002	.014 (REF)
2	.012 ±.002	.008 (REF)
□		

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010; .063R TO .250R ± .015; OVER .250R ± .020	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0015 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, MS & NS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

DWG SIZE 36-70
PRINTING INFO ONLY
FULL SIZE SHEET AREA (36.72) = 15 SQ. FT.
½ SIZE SHEET AREA (½ OF FULL) = 3.75 SQ. FT.
PRINT TRIM LINE

02702 NAS 9-1100

CODE IDENT NO. 26512
LDW280-17291 SH 3

← GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
H	26512	LDW280-17291 A

LEM — MODEL OR END ITEM — SCALE FULL — SHEET 3.00

FOR PHOTO REPRODUTION

LDW280-17291 A

ENG 736 644

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 2-65

ENGINEERING ORDER

DWG. NO. LE0280 | EO NO. 105

CONTROL INFO NO. LDW280-6275

ON THE FOLLOWING DRAWING NUMBERS ADD ALL DASH NUMBERS TO LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35) & LEM-6(36), N/A LDW280-235XX. QUANTITIES SAME AS FOR LDW280-255XX. NOTE: XX INDICATES EXISTING NUMBERS.

DRAWING NO.	CHANGE NO.	TITLE
LDW280-17291	A2	SEE DRAWING
LDW280-17442	A2	
LDW280-17711	A2	
LDW280M17268	B1	
LDW280M17272	A2	SEE DRAWING

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: ADDITIONAL REQUIREMENTS

DESCRIPTION OF EO: IN MODEL BLOCK FOR ALL DASH NOS. ADDED LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35) & LEM-6(36) REQUIREMENTS

GAEC EO RELEASE: B 10 | C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-3(13), LEM-2(32)	
LEM		LEM-3(33), LEM-4(34)	
LEM		LEM-5(35), LEM-6(36)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | REWORK | SCRAP

DISPOSITION OF PARTS: NOT REQD

APPROVED BY / DATE: 4/28/66 5/27 | V.D.I. | RELIAB GROUP | GROUP LEADER | STRESS GROUP 5/17/66 | LIAISON ENGRG | PROJ ENGRG 5-12-66

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LE0280

EO NO.: 105

BY A. CINO — X1153 SECTION V.D.I. GROUP NO. 280 PL 35

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-66

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A5132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	AG
17228		A2
17229		A2
17230		C2
17231		BG
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

LCD19-1242 2 C

DETAIL SPEC REQ | CL II ENGRG CHG | ✓ CL I ENGRG CHG

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

(R) GAEC EO RELEASE: JK 9/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R (96)	

DRAWING CHANGE & QD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REWORK | SCRAP
PRIORITY: C
DRAWING TITLE: NOTED

APPROVED BY: GAC 9/5/67 | YDI 9/5/67
DATE: 5
SUPPORT | RELIAB GROUP | GROUP LEADER 9/8 | STRESS GROUP 9/5/67 | LIAISON ENGRG W/H 9/5/67 | PROJ ENGRG 3-30-67 | 9/6/67

DRAWING NO. LEO280
EO NO. 541

ISSUED BY G. BECHER/J. STAKOSCH X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

NO 32.2 REV 3-65

ENGINEERING ORDER

DWG. NO.	LEO 280	EO NO.	711
CONTROL INFO NO.	LDW280A8642		

FOR THE FOLLOWING DRAWINGS (ALL DASH NO.*)
REMOVE LM-4(34) THRU LM-15(45) EFFECTIVITY

DWG N° *	CHG NO.	TITLE
LDW280-23566	B6	SEE DWG
LDW280-23569	B7	
LDW280-23575	C4	
LDW280-23576	D1	
LDW280-23577	B2	
LDW280-23586	B8	
LDW280-23593	B4	
LDW280M17272	B3	
LDW280M17606	B7	
LDW280M17607	B2	
LDW280M17700	B3	
LDW280M17268	C3	
LDW280M17625	B2	
LDW280M17626	B4	
LDW280M17605	B1	
LDW280-17291	B3	
LDW280-17711	C4	
LDW280-17290	B3	
LDW280-17289	C3	
LDW280-17879	B1	
LDW280-17739	B10	
LDW280-17881	B1	
LDW280-18219	B4	
LDW280-17891	A4	
LDW280-17708	B3	SEE DWG

NAS 9-1100

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	LCR 1433 CCA 586	3
REASON FOR EO: REDESIGN FOR ALSEP			DESCRIPTION OF EO: ON - * REMOVED LM-4(34) THRU LM-15(45) EFFECTIVITY	GAEC EO RELEASE: JK 9/19/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4(34)	
		THRU	
LM		LM-15(45)	

DRAWING CHANGE REQD: ✓ REVISE DWG; RECORD EO
DISPOSITION OF PARTS: REWORK; ✓ SCRAP
APPROVED BY / DATE: VDI 9/11/67; SUPPORT; RELIAB. GROUP; GROUP LEADER 9/11/67; STRESS GROUP 9/12/67; LIAISON ENGRG; PROJ ENGRG 9/14/67; 9-13-67
PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 711

9/20
ISSUED BY F MADDEN / J. STRAKOSCH SECTION VEHICLE DESIGN INT GROUP NO. 335 PL 25

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280 | EO NO. 763
CONTROL INFO NO. LDW280A9814

REMOVE LTA-3(13) EFFECTIVITY FROM ALL DASH NOS. (*) OF THE FOLLOWING DWGS:

DWG. NO.	N/A	TITLE	CHG. NO.	DWG. NO.	N/A	TITLE	CHG. NO.
LDW280-23569	LDW280-23510	SEE DWG.	B8	LDW280-17714	LDW280-23575	SEE DWG.	C4
-23576	-23569		D2	M17266	-23575		C4
-23577	-23569		B3	-23566	-23509		B9
-23575	-23569		C5	-17879	-23566		B2
-23578	-23569		B9	-17891	-23586		A5
-23586	-23569		B9	-17708	-23586		B4
M17272	-23569		B4	-17739	-23586		C1
-17290	-23576		B4	-23593	-23509		B5
-17711	-23576		C6	-17719	-23634		B4
-17792	-23576		B7	-17878	-23566		B2
-17716	-23576		B4	-17881	-23566		B2
M17606	-23576		B8	M17625	-23566		B3
M17607	-23576		B3	M17626	-23566		B5
				LDW280-17884	LDW280-23579	SEE DWG.	B4
-17291	-23577		B4				
-17296	-23577		B4				
-17713	-23577		C4				
-17715	-23577		B4				
M17629	-23575		B2				
M17605	-23575		B2				
-17712	-23575		A5				
-17294	-23575		B4				
M17640	-23575		B6				
LDW280-17289	LDW280-23575		C4				

01

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(P)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG ✓ | LCD 1433 | CCA 586

5

REASON FOR EO: PARTS NOT REQ'D.

DESCRIPTION OF EO: REMOVE LTA-3(13) EFFECTIVITY FROM -*

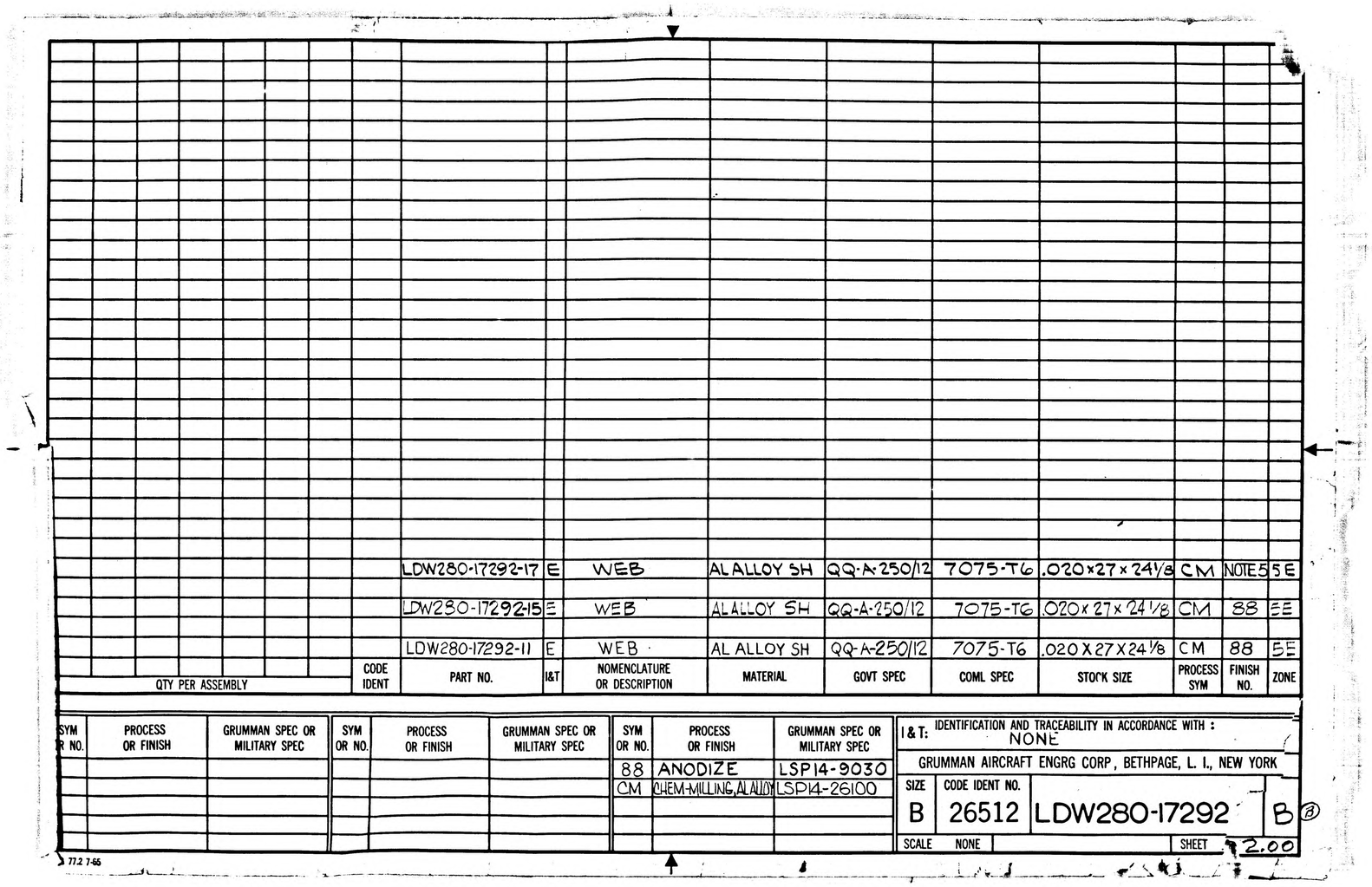
GAEC C EO RELEASE: JK 10/26/67

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
LM		LTA-3(13)		✓			✓

	DESIGN	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
APPROVED BY	[signature]			JAS	W/JL		J. AB	[signature]
DATE	10/20/67			10/20/67	10/21/67		10/2/67	10-26-67
	D	VDI						

PRIORITY: C | DRAWING TITLE: NOTED | DRAWING NO.: LE0280 | EO NO. 763

10/27 ISSUED BY E. RANSOM X7033 SECTION VEH. DES. INT. GROUP NO. 335 PL 25



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17292-17	E	WEB	AL ALLOY SH	QQ-A-250/12	7075-T6	.020 x 27 x 24 1/8	CM	NOTE 5	5E
		LDW280-17292-15	E	WEB	AL ALLOY SH	QQ-A-250/12	7075-T6	.020 x 27 x 24 1/8	CM	88	EE
		LDW280-17292-11	E	WEB	AL ALLOY SH	QQ-A-250/12	7075-T6	.020 X 27 X 24 1/8	CM	88	5E

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP14-9030
CM	CHEM-MILLING, AL ALLOY	LSP14-26100

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

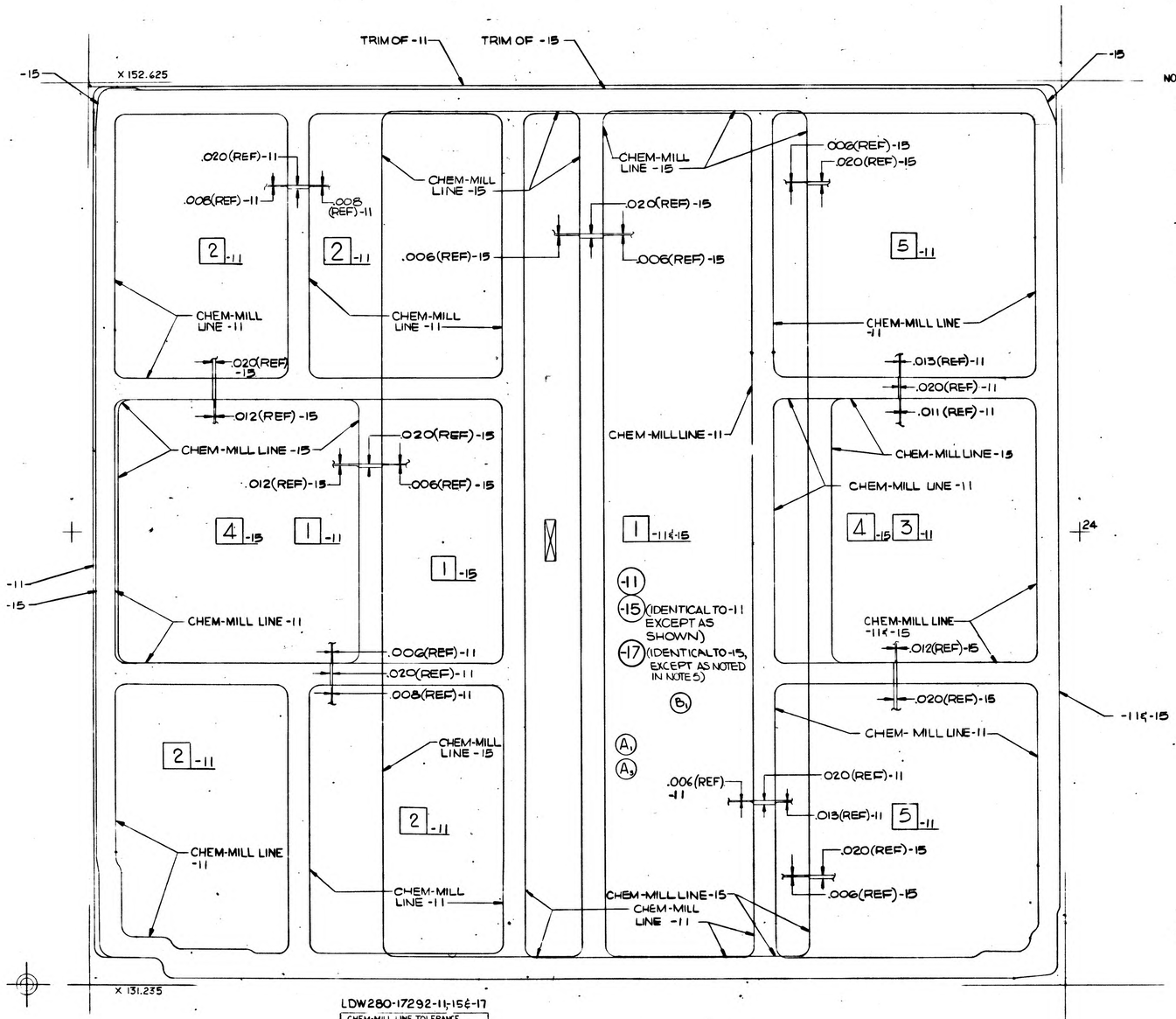
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17292	B (3)

SCALE NONE SHEET 2.00

77.2 7-65

01 NAS 9-1100



LDW280-17292-11-15&-17

CHEM-MILL LINE TOLERANCE ±1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ±1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040		
SYMBOL	THICKNESS AFTER CHEM-MILLING	# DEPTH OF CUT
1	.006 ±.002	.014 (REF)
2	.008 ±.002	.012 (REF)
3	.011 ±.002	.009 (REF)
4	.012 ±.002	.008 (REF)
5	.013 ±.002	.007 (REF)

30
25

NOTES

1. NO TOOLING HOLES PERMITTED IN PARTS
2. WEIGHT OF CHEM-MILL WEB AFTER FINAL TRIM (BUT BEFORE FASTENER HOLES ARE DRILLED) SHALL NOT EXCEED:
   FOR -11 .052 POUNDS
   FOR -15 .065 POUNDS
3. THICKNESS OF RAW MATERIAL BEFORE ETCH SEQUENCE SHALL BE .020±.005 THICKNESS SHALL NOT VARY BY MORE THAN .003 TOTAL OVER ENTIRE SHEET.
4. ~~EMITTANCE MEASUREMENTS SHALL BE TAKEN ON BOTH SURFACES OF THE WEB WITH A GIER-DUNKLE PORTABLE EMISSOMETER. THE TOTAL HEMISPHERICAL EMITTANCE AT 100°F SHALL BE 0.26 TO 0.38~~
5. a. DEOXIDIZE IN ACCORDANCE WITH LSP-14-7020 EXCEPT THAT IN PARA 3.3 ONLY THE HEAVY-DUTY ALUMINUM DEOXIDIZER SOLUTION (NITRIC ACID-SODIUM SULFATE) SHALL BE USED AND THE TOTAL IMMERSION TIME SHALL BE AS SPECIFIED IN d. BELOW.
   b. CHROMIC ACID ANODIZE IN ACCORDANCE WITH LSP-14-9030 EXCEPT THAT REQTS CONCERNING ANODIC FILM WGT AND/OR CORROSION RESISTANCE SHALL NOT APPLY. THE TOTAL ANODIZING CYCLE TIME, INCLUDING VOLTAGE RUN-UP, SHALL BE AS SPECIFIED IN d. BELOW.
   c. EMITTANCE MEASUREMENTS SHALL BE TAKEN ON BOTH SURFACES OF A FINISHED PART AND WITH A GIER-DUNKEL PORTABLE EMISSOMETER. THE SURFACES OF THE FINISHED PART SHALL HAVE AN AVERAGE TOTAL HEMISPHERICAL EMITTANCE OF 0.40±0.10 @ 100°F
   d. PARTS WHOSE ENTIRE SURFACE AREA HAS BEEN "FLASH ETCHED" IN A CHEM-MILLING BATH SHALL BE DEOXIDIZED FOR 5±1/2 MIN & THEN CHROMIC ACID ANODIZED FOR 38±1/2 MINUTES.
   PARTS WHOSE SURFACE CONSISTS OF CHEM-MILLED & 'AS ROLLED' SURFACES SHALL BE DEOXIDIZED FOR 15±1 MINUTES & THEN CHROMIC ACID ANODIZED FOR 38±1/2 MIN.
   PARTS WHOSE ENTIRE SURFACE AREA IS IN THE "AS-ROLLED" COND SHALL BE DEOXIDIZED FOR 15±1 MINUTES & THEN CHROMIC ACID ANODIZED FOR 38±1/2 MIN.
   PARTS THAT HAVE BEEN ANODIZED & POSSESS SURFACE EMITTANCE PROPERTIES OUTSIDE THE REQ'D TOLERANCE MAY BE REWORKED BY DE-OXIDIZING FOR 35-45 MIN & THEN CHROMIC ACID ANODIZING FOR 38±1/2 MIN.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .010R TO .062R ± .010; .063R TO .250R ± .015; OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0005 MAX MIN THICKNESS TO BE .0002 ON THREADED AREAS NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD 10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL X DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ±1/32	✓

01 NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK		
	SIZE E	CODE IDENT NO. 26512	LDW280-17292 B
LEM MODEL OR END ITEM	SCALE FULL		SHEET 3.00

FOR PHOTO REPRODUCTION

LM	LDW280-23578	LTA-3 D/E	1
LM	LDW280-23578	LM-15(45)	1
		LM-14(44)	1
		LM-13(43)	1
		LM-12(42)	1
		LM-11(41)	1
		LM-10(40)	1
		LM-9(39)	1
		LM-8(38)	1
		LM-7(37)	1
		LM-6(36)	1
		LM-5(35)	1
		LM-4(34)	1
		LM-3(33)	1
LM	LDW280-23578	LM-2(32)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17292-17		GAEC SCH NO.	

LEM	LDW280-23578	LTA-3(13)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17292-15		GAEC SCH NO.	

LEM	LDW280-25578	LEM-1(31)	1
LEM	LDW280-25578	LTA-8(18)	1
LEM	LDW280-25578	LTA-5(15)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17292-11		GAEC SCH NO. 57-2	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00	1.10	2.00	3.00						
REV	C	C	B	B						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	—
LAST DASH NO. USED	-17

GRUMMAN REL INFO C

PRIM NO.	
207	MP-56-7/1/3

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS — ANGLES
±1/32 ±.020 ±½°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NASH 9-1100 LINE ITEM # 1 DOCUMENTATION TYPE II

DRAWN BY	C.CASTELLANO 2-8-66	RELIABILITY	
LAYOUT BY	R.PJEROME		
CHECKED BY	EG 3-22-66		
GR LEADER	3/15/66		
VEH DESINT	3/24		
STRUCTURES	3/30	PROJ ENGR	4-4-66
STRUCTURES	3/30	REL GROUP	4-4-66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

WEB
DESCENT STAGE ~ SCIENTIFIC EQUIP.
SPT ℄ BHD

SIZE	CODE IDENT NO.		
B	26512	LDW280-17292	C

SCALE NONE SHEET 1.00 OF 4

ENG 27.1 9-64

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10 2.00, 3.00						EOA1	ADDED SH 1.10, SH 1 OF 4 WAS 1 OF 3. ADDED -13 & REVISED NOTE #2 TO INCLUDE -13.	LTA-3(13) LEM-2 THRU LEM-6	NOT REQD		E WICK 6-27-66 JGC		
	2	1.00, 1.10 2.00 3.00						EOA2	DELETED -13 & ADDED -15	LTA-3(13) LEM-2 THRU LEM-6		✓			
	3	1.10, 3.00						EOA3	IN NOTE 2, FOR -15 ADDED 0.65 POUNDS. IN NOTE 2, FOR -11 ADDED 0.52 POUNDS.	LTA-3-5 & -8 LEM-2 THRU LEM-6	NOT REQD				
	4	1.10							REF EOA3, ADDED LEM-5(35) EFFECTIVITY.	LEM-5					
B	1	1.00 1.10 2.00 3.00					✓	EO-B1	ADDED LDW280-17292-17 TO F/D, B/M & MOD/BLK REMOVED REQTS FOR LDW280-17292-15 FOR LM-2(32) LM-3(33), LM-4(34), LM-5(35) & LM-6(36) ADDED NOTE 4	LM-2, LM-3 LM-4, LM-5 LM-6		-15			
	2	1.10 3.00					✓	LEO280-163	IN NOTE 4, REVISED LIMITS, WAS 0.26 TO 0.38						
	3	1.10						EO-B3	CORRECTED CHANGE NUMBER FOR LEO280-163 B2 WAS A5	NOT REQD	NOT	REQD	C. PRIZZI 4-24-67		
	4	1.10 3.00					✓	LEO280-187	IN F/D REVISED NOTE 4.	LM-2 THRU LM-6				JG	
	5	1.10						EO-B5	CORRECTED CHANGE NUMBER FOR LEO280-187 B4 WAS A6	NOT REQD					
C	1	1.00 1.10						LEO280-301	FOR -17 ADDED LM-7 THRU LM-15 EFF.	LM-7 THRU LM-15					
	2	1.10					✓	LEO280-541 LCD - 1242	IN MOD/BLK FOR -17 ADDED LTA-3 DR EFF	LTA-3 D/R					
	3	1.10							REF LEO 280-187 REMOVED NOTE 4, ADDED NOTE 5	LM-2 THRU LM-6	NOT	REQD			

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY	PROJ ENGR	REL GROUP
	A								
	B								
	C								

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17292	C

SCALE NONE SHEET 1.10

ENG 77.16 3-66

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-17292 | EO NO. B1
CONTROL INFO NO. LDW280-8233

EO NUMBER WAS A4

IN B/M, F/D & MOD/BLK ADD LDW280-17292-17 IDENTICAL TO LDW280-17292-15 EXCEPT FOR NOTE ** AND AS NOTED:
LDW280-17292-15 IS EFF ON LTA-3(13) ONLY
LDW280-17292-17 IS EFF ON LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35) & LEM-6(36)
IN B/M FOR LDW280-17292-17 ADD SEE NOTE ** TO THE FINISH COLUMN.

ADD NOTE ** TO F/D
NOTE **: EMITTANCE MEASUREMENTS SHALL BE TAKEN ON BOTH SURFACES OF THE WEB WITH A GIER-DUNKLE PORTABLE EMISSOMETER. THE TOTAL HEMISPHERICAL EMITTANCE, AT 100°F SHALL BE 0.26 TO 0.38

(NOT TO BE INCORPERATED ON DWG) (GAEC INFO ONLY)
PARTS WHICH HAVE EMITTANCE READINGS OUTSIDE OF THE 0.26 TO 0.38 LIMITS SHALL BE TAGGED AND WILL BE REWORKED. REWORK PROCEDURE WILL BE DESCRIBED ON A SUBSEQUENT REVISION

** USE NEXT AVAILABLE NOTE NO.

DETAIL SPEC REQ | CL II ENGRG CHG | ✓ CL I ENGRG CHG

REASON FOR EO: TO PROVIDE PROPER THERMAL CONTROL SURFACE

DESCRIPTION OF EO: ADDED LDW280-17292-17 TO F/O B/M & MOD/BLK
REMOVED REQTS FOR LDW280-17292-15 FOR LEM-1(31), LEM-3(33), LEM-2(32), LEM-5(TT) & LEM-6(TC) ADDED NOTE **

GAEC EO RELEASE: 12/24/64

EFFECTIVITY

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
CEM		LEM-2(32) LEM-5(35)	
LEM		LEM-3(33) LEM-6(36)	
LEM		LEM-4(34)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK | SCRAP ✓
APPROVED BY: DATE 12/24/64 | VDI | SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG | GOVT
PRIORITY: C
DRAWING TITLE: DESCENT STAGE WEB SPT & BHD SCIENTIFIC EQUIP
DRAWING NO.: LDW280-17292
EO NO.: B1

ISSUED BY G. BARNES / J. STRAKOSCH X1392 SECTION VDI
GROUP NO. 335 PL 35

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ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-17292 | EO NO. B3
CONTROL INFO NO. LM5-9802

CHANGE NUMBER B2 WAS A5
REF LDW280-17292
ON LEO 280-163

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO
INCORRECT CHANGE No. ISSUED ON LEO 280-163

DESCRIPTION OF EO
CORRECTED CHANGE NUMBER FOR LEO 280-163 B2 WAS A5

GAEC EO RELEASE: V ✓ | FR

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO	SUB CONTR UNIT NO
LM		NOT REQD	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: NOT REWORK	REQD SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
✓				JRS	11/30					CH 12-3-66	DMC (WD) 12-7-66
				6	VD1						Booth 11-30-66

PRIORITY: E
DRAWING TITLE: WEB - D/S SCIENTIFIC EQUIP SPT & BHD
DRAWING NO: LDW280-17292
EO NO.: B3

ISSUED BY LIAISON, D. VALENZA SECTION VD1 GROUP NO. 335 PL 35

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280 17292		EO NO. B5
CONTROL INFO NO. LM5-9803		

CHANGE NUMBER B4 WAS A6
REF LDW 280-17292
ON LEO 280-187

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	

REASON FOR EO
INCORRECT CHANGE No. ISSUED ON LEO 280-187

DESCRIPTION OF EO
CORRECTED CHANGE NUMBER FOR LEO 280-187, B4 WAS A6

GAEC EO RELEASE: FR

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO	GAEC UNIT NO	SUB CONTR UNIT NO
LM		NOT REQD	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: NOT REWORK	REQD SCRAP	APPROVED BY	DATE		SUPPORT	RELIAB GROUP		STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
✓					12-30	VDI					12-3-66	12-7-66	11-30-66

PRIORITY	DRAWING TITLE	DRAWING NO	EO NO.
E	WEB ~ DESCENT STAGE SCIENTIFIC EQUIP SPT & BHD	LDW280-17292	B5

ISSUED BY LIAISON, D. VALENZA SECTION VDI GROUP NO. 335 PL 35

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 33.2 REV 3-66

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A6132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D7
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	LCD19-1242	2

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R	(46)

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK NOT REQD | SCRAP

APPROVED BY: YDI 3/28/67 | SUPPORT | RELIAB GROUP | GROUP LEADER 5/5/67 | STRESS GROUP 4/26/67 | LIAISON ENGRG | PROJ ENGRG 3-30-67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 541

ISSUED BY G. BECKER/J. STAKOSCH X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-17292 | EO NO. D1
CONTROL INFO NO. LDW280B4050

ENG 32.1 REV 3-65

REMOVE -15 REQUTS.

RESTRICT -17 TO LM-2(32), LM-3(33), & LTA-3D/R EFF.
WAS LM-2(32) THRU LM-15(45) & LTA-3D/R

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LCR 1433 CCA 586/1111 PKG 17

REASON FOR EO: DWG CORRECTION - DETAIL PART EFF & USAGE TO AGREE WITH NEXT ASSY.

DESCRIPTION OF EO: REMOVED -15 REQMTS. RESTRICTED -17 TO LM-2(32), LM-3(33), & LTA-3 D/R EFF.

GAEC EO RELEASE: (5) 6/24/68

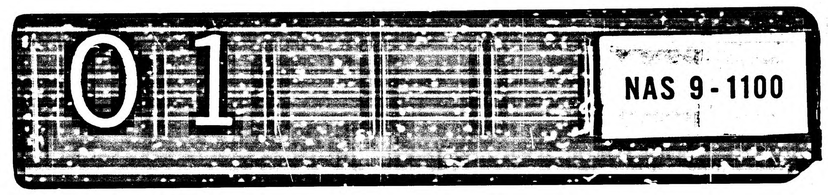
MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3(13)	
LM		LM-4(34) THRU	
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP ✓
✓			✓

APPROVED BY								
DATE	6/4/68			6-4-68	6/3/68	6/6/68	6/6/68	6-24-68
	C	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRINT: C
DRAWING TITLE: WEB ~ D/S ~ SEQ. SPT ~ & BHD
DRAWING NO.: LDW280-17292
EO NO.: D1

ISSUED BY 6-26-68 T. COTTER x 3352 / P. THORJUSEN SECTION VDI GROUP NO. 335 PL 25



LDW280-17293 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-28579	LTA-8(18)	1
LEM	LDW280-25579	LTA-5(15)	1
LEM	LDW280-28579	LEM-1(31)	1
PART NO. LDW280-17293-13		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-28586	LTA-8(18)	1
LEM	LDW280-25586	LTA-5(15)	1
LEM	LDW280-28586	LEM-1(31)	1
PART NO. LDW280-17293-11		GAEC SCH NO. 51-2	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10	2.00	3.00					
REV	A	A		A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	
LAST DASH NO. USED	-13

GRUMMAN REL INFO A
PRIM NO. VG(001) 207 MP-A 8-17-6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 | LINE ITEM # 1 | DOCUMENTATION TYPE II

DRAWN BY	E.SICK 3-19-66	RELIABILITY	
LAYOUT BY	C.DEANGELIS 3-22-66		
CHECKED BY	3-22-66		
GR LEADER			
VEH DES INT	3/28		
STRUCTURE	KEP	PROJ ENGR	4-8-66
STRUCTURE	4/2	REL GROUP	4-8-66
WEIGHTS	7/7		

(N) GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

WEB
DESCENT STAGE-SCIENTIFIC EQUIP BAY-END CLOSURE

SIZE	CODE IDENT NO.		
B	26512	LDW280-17293	A
SCALE NONE		SHEET 1.00 OF 4	

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	QUAL APPD
A	1	1.00, 1.10, 3.00	5A					EO-A1	IN FIELD, ON -115-13 WEB, REVISED TRIM LINE. SHEET 1.00 OF 4 WAS 1.00 OF 3, ADDED SHEET 1.10.	LTA-5, -8 LEM-1	✓		LAMBERT 6-8-66		
	2	1.00 & 1.10						LE0280-157	FOR ALL DASH NOS NEXT ASS'Y LDW280-28586 WAS LDW280-25586	LTA-8 & LEM-1	NOT	REQD	A. STERNBERG 7-16-66		
	3	1.00 & 1.10						(P)	REF. LE0280-157 FOR -13 NEXT ASSY LDW280-28579 ON LEM-1(31) & LTA-8(18) WAS LDW280-25579			S.J.			

CHG APPROVED	LTR	GROUP LDR	VEH. DES. INT.	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
	A			FEB 7/18			

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280 17293	A

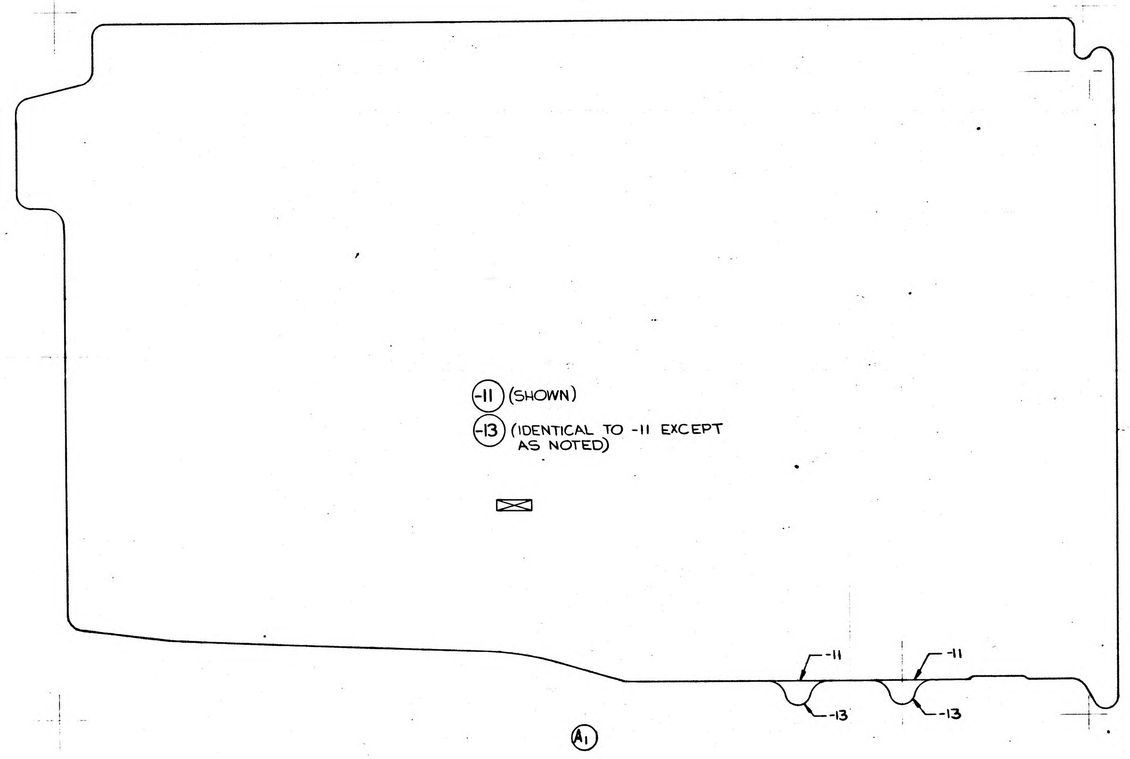
SCALE NONE SHEET 1.10

ENG 77.10 3-66

01 NAS 9-1100

LDW280-17293 A

NOTE
1. NO TOOLING HOLES PERMITTED IN PART.



(-11) (SHOWN)

(-13) (IDENTICAL TO -11 EXCEPT AS NOTED)

(A1)

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED 1S	
SYMBOL X DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
LEM	SIZE D	CODE IDENT NO. 26512	LDW280-17293	A
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

FOR PHOTO REPRODUCTION

LDW280-17293 A

01 NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17293-13	E	WEB	AL ALLOY SH	QQ-A-250/12	7075-T6	.024×15 1/8×23 3/4	NONE	88	
		LDW280-17293-11	E	WEB	AL ALLOY SH	QQ-A-250/12	7075-T6	.024×15 1/8×23 3/4	NONE	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	ISP 14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17293

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 157
CONTROL INFO NO. LDW280-7827

FOR ALL DASH No'S

CHG. No.	DWG AFFECTED:	DWG TITLE
A2	LDW280-17293	WEB, DESC STAGE - SCIENT. EQUIP. BAY - END CLOSURE
A2	LDW280-17298	STIFF, DESC. STAGE - SCIENT. EQUIP. BAY - END CLOSURE
A3	LDW280-17299	PLATE, DESC. STAGE - SCIENT EQUIP. BAY - END CLOSURE
A2	LDW280M17548	FITTING, DESC. STAGE - SCIENT EQUIP BAY - END CLOSURE

FOR LTA-8(18) & LEM-1(31) N/A LDW280-28586
WAS LDW280-25586

QUANTITIES REMAIN THE SAME

2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: TO ACCOM. RTG INSTL

DESCRIPTION OF EO: FOR ALL DASH NO'S N/A LDW280-28586 WAS LDW280-25586.

(R) EO RELEASE: GAEC ✓ AEC FR 7/11/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM	LTA-8(18)		
	LEM-1(31)		

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: NOT REWORK	REQD SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
✓				JAS	6/21/66	VDI			JMH 7/11/66		Robott 7-2-66

PRIORITY: C | DRAWING TITLE: NOTED | DRAWING NO.: LEO280 | EO NO.: 157

ISSUED BY C. De Angelis 6/14/66 SECTION VEH. DES. INT. GROUP NO. 335 PL 35

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17294-29	E	STIFFENER	AL ALLOY SH	QQ-A-250/12	7075	.040 x 1 7/8 x 12 5/8	T6	88	
-27								.028 x 1 5/8 x 10			
-25								.040 x 1 7/8 x 12 5/8			
23								.028 x 1 5/8 x 10 1/8			
22								.020 x 1 5/8 x 8			
21								.020 x 1 5/8 x 8			
-19								.020 x 1 3/4 x 12 5/8			
-17								.028 x 1 5/8 x 10			
-15								.020 x 1 3/4 x 12 5/8			
-13								.028 x 1 5/8 x 10 1/8			
-12								.020 x 1 5/8 x 8			
		LDW280-17294-11	E	STIFFENER	AL ALLOY SH	QQ-A-250/12	7075	.020 x 1 5/8 x 8	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP14-9030
T6	AL HEAT TREAT	MIL-H-6088

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17294	A

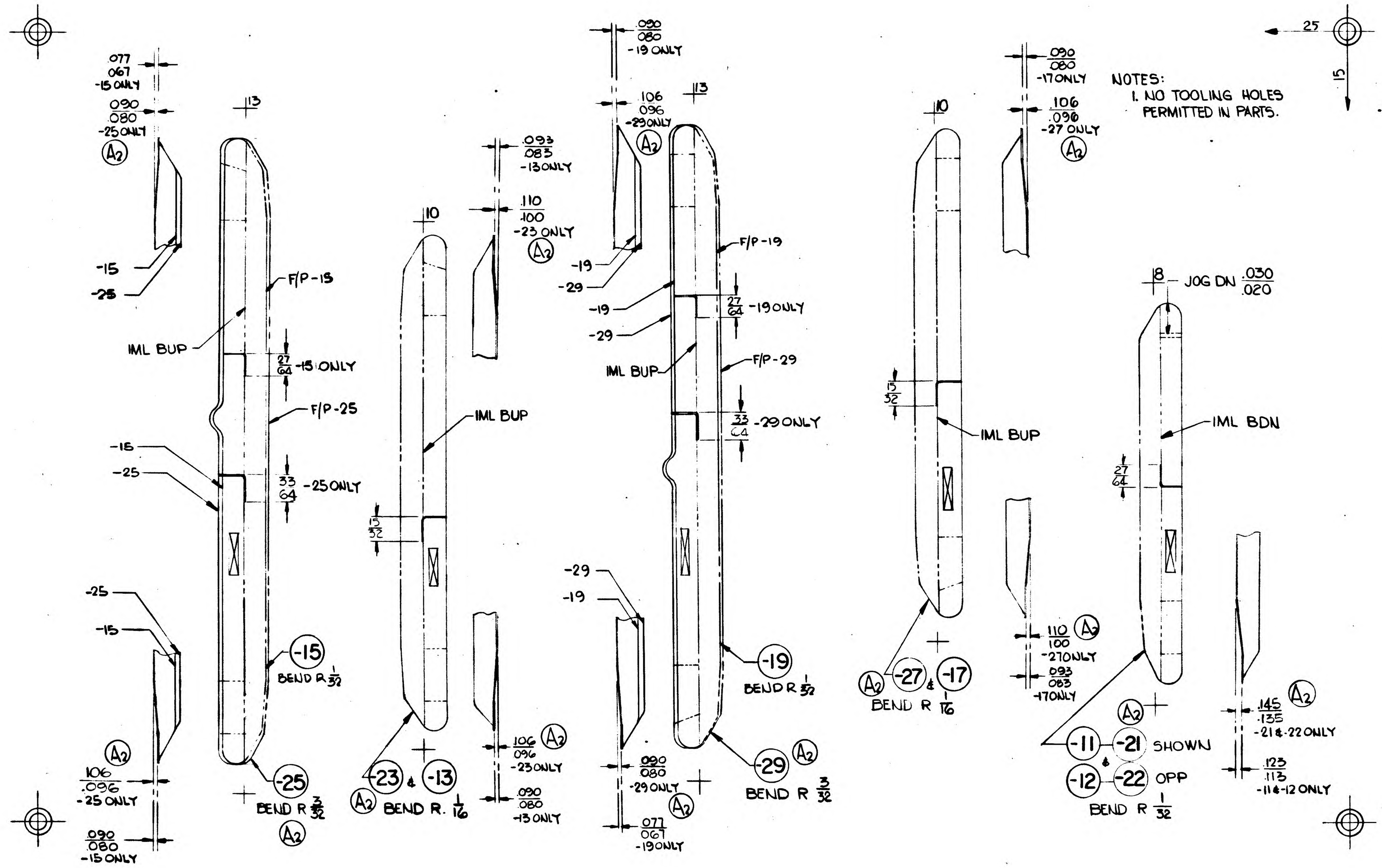
SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

LDW280-17294A



NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ~~USE BOTH SIDES IF NECESSARY~~	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
LEM	SIZE D	CODE IDENT NO. 26512	LDW280-17294	A
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

FOR PHOTO REPRODUCTION K2

LDW280-17294A

807975

01 NAS 9-1100

LEM	LDW280-54575	DVT (70)	1
	LDW280-23575	LTA-3D/R(46)	1
	LDW280-54575	LEM-15(45)	1
		THRU	
		LEM-7(37)	1
		LEM-6(36)	1
		LEM-5(35)	1
	LDW280-54575	LEM-4(34)	1
	LDW280-23575	LEM-3(33)	1
	LDW280-23575	LEM-2(32)	1
LEM	LDW280-23575	LTA-3(13)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17294-29		GAEC SCH NO.	

LEM	LDW280-54575	TM-5/R(65)	1
	LDW280-54575	DVT (70)	1
	LDW280-23575	LTA-3D/R(46)	1
	LDW280-54575	LEM-15 (45)	1
		THRU	
		LEM-7 (37)	1
		LEM-6(36)	1
		LEM-5(35)	1 EA
	LDW280-54575	LEM-4(34)	1 EA
	LDW280-23575	LEM-3(33)	1 EA
	LDW280-23575	LEM-2(32)	1 EA
LEM	LDW280-54575	LTA-3(13)	1 EA

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17294-23 & -27		GAEC SCH NO.	

LEM	LDW280-23575	LTA-3D/R(46)	1
LEM	LDW280-23575	LEM-3(33)	1
LEM	LDW280-23575	LEM-2(32)	1
LEM	LDW280-23575	LTA-3(13)	1
PART NO. LDW280-17294-21,-22 & -25			
LEM	LDW280-25575	LEM-1(31)	1
LEM	LDW280-25575	LTA-8(18)	1
LEM	LDW280-25575	LTA-5(15)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17294-11-12-13,15-17 & -19		GAEC SCH NO. 51-2	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10	2.00	3.00					
REV	B	B	A	A					
SHEET									
REV									
SHEET									
REV									

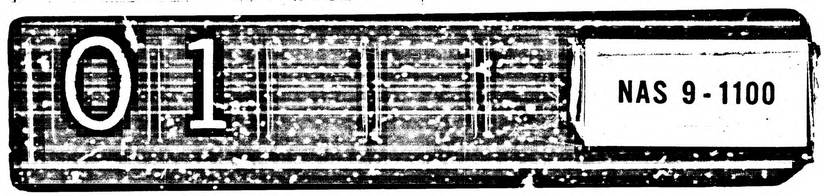
LAST SECT LTR USED		GRUMMAN REL INFO B	
LAST DASH NO. USED	-29	PRIM NO.	207

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100		LINE ITEM # 1	DOCUMENTATION TYPE II
DRAWN BY	DAGOSTO 2-28-66		GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK
LAYOUT BY	BUKOWSKI		STIFFENERS
CHECKED BY	E.J.B. 3-3-66		DESCENT STAGE-SCIENTIFIC EQUIP SUPPORT
GROUP LDR			UPPER DECK
VEH. DES. INT			
STRUCTURES	3/30	PROJ ENGR	SIZE B / CODE IDENT NO. 26512 / LDW280-17294 / B
STRUCTURES	3/30	REL GROUP	SCALE NONE / SHEET 1.00 OF 4
WEIGHTS	3/29		

ENG 77.1 9-64



REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	QUALITY APPD
A	1	1.00, 1.10						LEO 280 -78	IN MOD BLK FOR ALL DASH NOS. REMOVED LTA-3, LEM-2 THRU LEM-6 & REVISED N/A WAS LDW280-23575 ADDED SH* 1.10, SH 1.00 OF 4 WAS 1.00 OF 3	LTA-3, -5-8 LEM-1 THRU-6		✓	NISBET 5-12-66		
	2	1.00, 1.10, 2.00 & 3.00						EOA2	ADDED -21, -22, -23, -25 -27 & -29. IN M/B FOR -11, -12, -13, -15, -17 & -19 REMOVED LTA-3 LEM-2, LEM-3 LEM-4, LEM-5 & LEM-6 EFF; N/A WAS LDW280-23575 FOR LTA-5, LTA-8 & LEM-1.	LTA-3, -5 & -8 LEM-1, -2 & -3 LEM-4, -5 & -6		-11, -12 -13, -15 -17 & -19	E. SULSENTI 6-20-66		
	3			ADV					REF EOA2. IN MOD/BLK FOR -11, -12, -13, -15, -17 & -19 REMOVED LTA-3, LEM-2 THRU LEM-6 EFF & N/A WAS LDW280-23575 FOR LTA 5, LTA-8 & LEM-1 PREVIOUSLY INC ON EOA1	NOT REQ'D	NOT	REQ'D			
B	1	1.00							INC LEO 280-301	LEM-7 THRU LEM-15					
	2	1.00							INC LEO 280-541	LTA-3D/R					
	3	1.00							INC EO B3	LEM-4 THRU LEM-15 DVT			F. HOFSISS 3-24-69		
	4	1.00		D					INC LEO 280-763	LTA-3					
	5	1.00							INC LEO 280-788	LTA-3					
	6	1.00						(R)	INC LEO 280-969	TM-5/R			N.T.		

FOR CONTINUATION OF REVISIONS SEE SHEET _____

ENG 77.3 5-65

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17294	B

SCALE NONE | SHEET 1.10 (B)

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-66

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A 5132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

LCD19-1242

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG
		✓

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R	(46)

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: NOT REQD; REWORK; SCRAP
APPROVED BY: DATE 3/28/67; 5 YDI; SUPPORT; RELIAB GROUP
GROUP LEADER 3/28/67; STRESS GROUP 4/3/67; LIAISON ENGRG 3-30-67; PROJ ENGRG 4/6/67

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 541

ISSUED BY G. BECHER/J. STAKUSCH X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

DWG NO. LEO 280 | EO NO 1447

ENG 32.1 REV 3-66 — ENGINEERING ORDER — CONTROL INFO NO. LDW280B7393

FOR THE DWGS LISTED BELOW DELETE LM-15 (45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17278 ✓	E4	SEE DWG
-17279 ✓	B3	
-17294 ✓	C1	
-17303	B3	
-17306	B5	
-17307	B6	
-17310	C1	
LDW280-17321	A3	SEE DWG

* APPLICABLE DASH NOS (6)

DETAIL SPEC REQ | CL II ENGRG CNG | CL I ENGRG CNG | ✓ LCD 3587 PKG 50 PG. 9 | CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM *

EO RELEASE DATE: JK 8/1/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	BASIC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY: DATE	VDR	SUPPORT	RELIAB. SUPERV.	GROUP LEADER	STRESS END ITEM	LIAISON ENGRG	PROJ ENGR
LM	—	LM-15(45)						8/1/69				8/1/69	8/1/69	8/1/69	8/1/69

PRIORITY: C — DRAWING TITLE: SEE DWG — ORDER NO. LEO 280 — EO NO. 1447

052869 ISSUED BY MEVORAH / THORTUSEN X36046 SECTION VEH DES INT GROUP NO. 335 PL 25

01

NAS 9-1100

THIS IS AN ORIGINAL EO

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG 22.1 REV 3-68

DWG. NO. LEO 280 | EO NO. 1525
CONTROL INFO NO. LDW280B8078

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (-40) [redacted]
ADD LTA-11 ([redacted]23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING Nº *	TITLE	CHANGE Nº
LDW280-17254	SEE DWG	C6
-17264		D4
-17278		E5
-17279		B4
-17294		C2
-17303		B4
-17306		B6
-17307		B7
-17321		A4
LDW280-17323	SEE DWG	B4

DETAIL SPEC REQ | CI II ENGRG CNG | CI I ENGRG CNG | ✓ LCD 3890 PKG 99 Pg 243 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 ([redacted]23) REQMTS

GAEC EO RELEASE: JR 3-4-69; JK 8/8/69; MKJ Lauman 8/7/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11([redacted])	
		(23)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: NOT REQ'D REWORK; SCRAP
APPROVED BY / DATE: BSY 7-29-69; N 8-7-69; VDI 8-12-69
SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG

PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO.: LEO 280
EO NO.: 1525

8-12-69 ISSUED BY G. HANSMANN X 87222 (ML) SECTION VDI GROUP NO 335 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 1647

CONTROL INFO NO. LDW280B - 8453

FOR THE FOLLOWING DRAWINGS ADD LTA 3 DR/1 (460) REQ'MTS WITH THE SAME NEXT ASSY AND QUANTITY AS FOR LM 10 (40)

	DRAWING NO. *	TITLE	NEXT ASSY	CHG NO.
	LDW280 - 17712	SEE DRAWING	LDW280-54575	B3
✓	17714		-54575	D4
✓	17442		-54575	B7
✓	18346		-54575	A6
✓	18356		-54575	B3
✓	17294		-54575	C3
	18370		~~-54543~~ -54575	A6
	18372		-54575	A6
	18349		-54575	B2
	18379		-54575	A8

DETAIL SPEC REQ | | CL II ENGRG CHG | | CL I ENGRG CHG | ✓ LCD 3890 PKG 70 PG 9 (5)

REASON FOR EO: ADDITION OF EXTENDED D/S PROPELLENT TANKS

DESCRIPTION OF EO: ON-* ADDED LTA 3 DR/1 (460) REQ'MTS

GAEC II EO RELEASE: SAB 8.29 | JK 8/28/69 | [illegible] 8/29/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA 3DR/1 (460)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO

DISPOSITION OF PARTS: REWORK | SCRAP

APPROVED BY: DJT | DATE: 8-8-69 | VDI | SUPPORT | RELIAB. GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG

PRIORITY: C

DRAWING TITLE: SEE DRAWINGS

DRAWING NO.: LEO280

EO NO.: 1647

ISSUED BY F. OLIVERI EXT 86098 SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

GRUMMAN AEROSPACE CORPORATION

CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280-17294 | EO NO. C4

CONTROL INFO NO. LDW280B9559

FROM M/B DELETE -29 N/A LDW280-54575 EFF. LTA-11 (23), LTA-3 DR/1 (460), DVT (70), & LM-4 (34) THRU LM-14 (44) (1) REQ'D/MOD.

DETAIL SPEC REQ | Cl II ENGRG CHG | Cl I ENGRG CHG | ✓ LCD 1433 (5)

REASON FOR EO: -29 REPLACED BY LDW280-18372-11 ON INITIAL RELEASE OF LDW280-54575

DESCRIPTION OF EO: FROM M/B DELETED -29 N/A LDW280-54575 REQUIREMENT.

GAEC EO RELEASE (8)

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LTA-11(23), LTA-3DR/1(460)	
		DVT(70)	
LM		LM4(34) THRU	LM-14(44)

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK | SCRAP ✓

PRIORITY: C

DRAWING TITLE: STIFFENERS D/S -SCIENTIFIC EQUIP. SUPPORT UPPER DECK.

DRAWING NO.: LDW280-17294

EO NO.: C4

APPROVED BY	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
DATE	VDI		12/3/69	12/6/70		12/7/70

ISSUED BY H. SCHAGAT X86046 SECTION VDI GROUP NO. 335 PL. 25

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NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17295-26	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.032 x 2 1/2 x 23 5/8	T6	88	
-25								.032 x 2 1/2 x 23 5/8			
-24								.032 x 2 1/2 x 23 5/8			
-23								.032 x 2 1/2 x 23 5/8			
-22								.032 x 1 3/4 x 23 5/8			
-21								.032 x 1 3/4 x 23 5/8			
-20								.032 x 1 7/8 x 14 1/4			
-19								.032 x 1 7/8 x 14 7/8			
-18								.032 x 2 1/2 x 23 5/8			
-17								.032 x 2 1/2 x 23 5/8			
-15								.032 x 2 1/2 x 23 5/8			
-14								.032 x 1 5/8 x 25			
-13								.032 x 1 5/8 x 25			
-12								.032 x 1 3/4 x 23 3/8			
		LDW280-17295-11	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.032 x 1 3/4 x 23 5/8	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

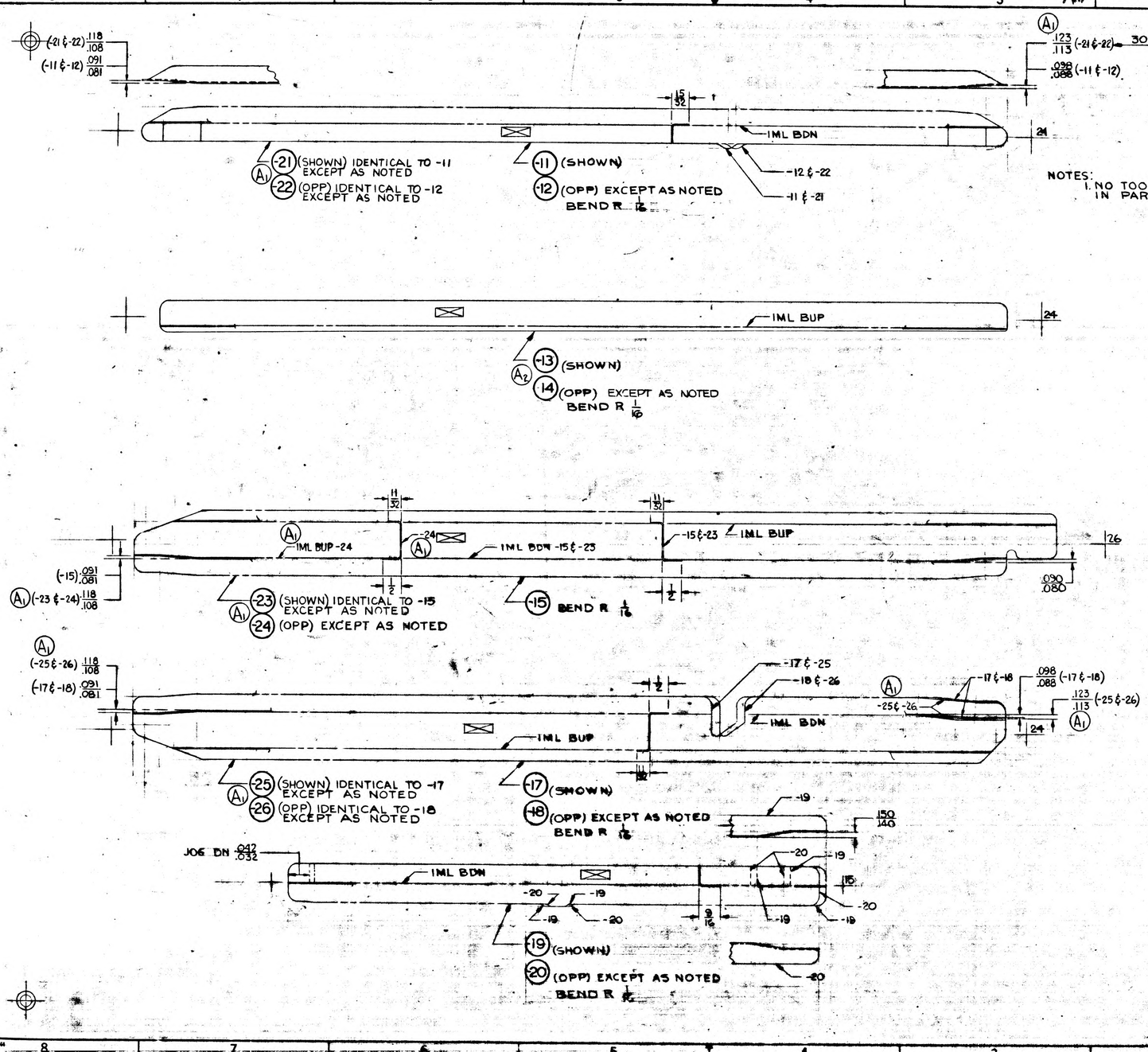
SIZE	CODE IDENT NO.		
B	26512	LDW280-17295	A

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100



MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.

- RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY. ✓
- FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .008; .063R TO .250R ± .015; OVER .250R ± .030
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 MIN. THDS. BEYOND PERMISSIBLE
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES
- 125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
- 200 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS
- SYMBOL √ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES 0° ± 1/2°
- LENGTHS OF AN, NAS & MS A .4" RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED
- TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32 ✓

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
F	26512	LDW280-17295	A

LEM — MODEL OR END ITEM — SCALE — SHEET 3.00

LDW280-17295A D C B (S) A

FOR PHOTO REPRODUCTION K2

NAS 9-1100

01

LEM	LDW280-23576	LEM-3(33)	2 EA
LEM	LDW280-23576	LEM-2(32)	2 EA
LEM	LDW280-23576	LTA 3D R(46)	2 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17295-13,-14		GAEC SCH NO.	

LEM	LDW280-23576	LEM-3(33)	1 EA
LEM	LDW280-23576	LEM-2(32)	1 EA
LEM	LDW280-23576	LTA 3D R(46)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17295-19,-20,-21, -22,-23,-24,-25 & -26		GAEC SCH NO.	

LEM	LDW280-25576	LTA-8 (18)	2 EA
LEM	LDW280-25576	LTA-5 (15)	2 EA
LEM	LDW280-25576	LEM-1(31)	2 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17295-13,-14 & 15		GAEC SCH NO.	

LEM	LDW280-25576	LTA-8(18)	1 EA
LEM	LDW280-25576	LTA-5(15)	1 EA
LEM	LDW280-25576	LEM-1(31)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17295-11,-12,-17,-18		GAEC SCH NO. 51-2	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	L00	1.10	2.00	3.00						
REV	B	B	A	A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	
LAST DASH NO. USED	-26

GRUMMAN REL INFO B"
PRIM NO. JK(DEN) 207 ME-18 3/6/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS9-1100		LINE ITEM #1	DOCUMENTATION TYPE (5)
DRAWN BY A. LITVINOFF 2-28-66	RELIABILITY		GRUMMAN AIRCRAFT ENGRG CORP (R) BETHPAGE, L. I., NEW YORK
LAYOUT BY G. KOURY 2-14-66			ANGLE - DESCENT STAGE-SCIENTIFIC EQUIP. SUPPORT- LOWER DECK
CHECKED BY 3-8-66			
GP LEADER			
VEH DES INT			
STRUCTURES	4-1	PROJ ENGR	SIZE B / CODE IDENT NO. 26512 / LDW280-17295 / B (R)
STRUCTURES	4/1	REL GROUP	SCALE NONE / SHEET 1.00 OF 4
WEIGHTS			

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGR'G APPD	GOVT APPD
A	1	1.00, 1.10, 2.00 & 3.00	7G,7D 7B					EO A1	ADDED -21, -22, -23, -24, -25, -26 & REQUIREMENTS FOR -13, -14, -19 & -20 EFFECTIVITY FOR LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35) & LEM-6(36), N/A LDW280-23576. SH 1 OF 4 WAS SH 1 OF 3, ADDED SH 1.10.	NOTED	NOT	REQD	A. BEERS 11-5-66		
	2	1.10 & 3.00	5F					EO A2 (4)	ON -13 & -14 REVISED FLANGE	LTA-3,-5,-8 LEM-1 THRU-6	✓	(W)	ARMAS 7-26-66		
B	1	1.00 & 1.10	-						INC. LEO 280-301.	LEM 7 THRU LEM 15			OBERNIER 3-3-69		
	2	1.00 & 1.10							INC. LEO 280-541	LTA-3D/R (46)					
	3	1.00 & 1.10		S					INC. EO B3	LEM 4 THRU LEM 15					
	4	1.00 & 1.10		D					INC. LEO 280-783.	LTA-3(13)					
	5	1.00 & 1.10							INC. EO B5.	LTA-3(13)					
	6	1.00 & 1.10		G				(8)	INC. EO B6.	LTA-3(13)			W.D. 4-5-69		

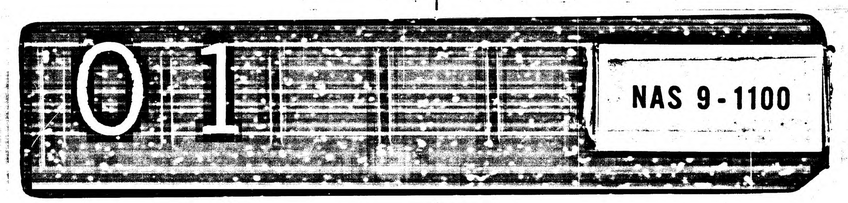
CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
	B						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17295	B (Y)

SCALE NONE SHEET 1.10

ENG 7316 3-66



NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 39.2 REV 3-66

DWG. NO. LEO280 | EO NO. 541
CONTROL INFO NO. LDW280A 6132

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ | CL II ENGRG CHG | / | CL I ENGRG CHG | LCD19-1242 2 C

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

(R) GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R	(96)

DRAWING CHANGE REQD: / REVISE DWG | RECORD EO
DISPOSITION OF PARTS: NOT REWORK | REQD SCRAP
APPROVED BY: DGF
DATE: 3/28/67
5 YDI
SUPPORT | RELIAB GROUP | GROUP LEADER: 4/5/67 | STRESS GROUP: 4/4/67 | LIAISON ENGRG: WW | PROJ ENGRG: 3-30-67 4/4/67

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 541

ISSUED BY G. BECHER/J. STARKSCH X1153 SECTION YDI GROUP NO. 335 PL 25

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO.	LDW280-17295		EO NO. B3
CONTROL INFO NO.	LDW280A8646		

FOR -13,-14,-19,-20,-21,-22,-23,-24,-25 & -26 REMOVE LM-4 (34) THRU LM-15(45) EFFECTIVITY

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	LCD 1433 CCA 586 OK	3

REASON FOR EO: REDESIGN FOR ALSEP

DESCRIPTION OF EO: FOR -13-14-19-20-21,-22-23-24-25 & -26 REMOVED LM-4(34) THRU LM-15(45) EFF.

GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4(34)	
		THRU	
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO

DISPOSITION OF PARTS: REWORK; SCRAP ✓

PRIORITY: C

DRAWING TITLE: ANGLE~D/S~SCIENTIFIC EQUIP. SUPPORT~LOWER DECK

DRAWING NO.: LDW280-17295

EO NO.: B3

	APPROVED BY	DATE							
			SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
	[illegible]	8/15/67	VDI		9/1/67	9/23/67		9/28/67

9/27
ISSUED BY F. MADDEN/J. STRAKOSCH

SECTION VEH DES INT GROUP NO. 335 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO280 | EO NO. 783
CONTROL INFO NO. LDW280A9815

ADD LTA-3(13) EFFECTIVITY TO DASH NO.* OF THE FOLLOWING DWGS.:
QUANTITY SAME AS LM-4(34) THRU LM-15(45)

DWG. NO.	N/A	TITLE	CHG. NO.	DASH NO.*
LDW280-54510	LDW280-54509	SEE DWG.	E 1	-1
M17741	-54576		A2	-11,-13
M17743	-54576		A2	-13
M17744	-54576		A2	-13
M17745	-54576		A2	-11,-12,-13
M17770	-54576		A1	-11
-17883	-23578		B5	-15,-17
-17295	-54576		B4	-19-15-13-20-21 -22-23-24-25-26
-18342	-54576		A1	-11,-13,-15,-17
-17623	-54566		B6	-17,-19
-18343	-54576		A1	-11,-13,-15,-17,-19
-18344	-54576		A1	-11,-13,-15,-17,-19
M17746	-54576		A1	-11
M17747	-54576		A2	-11
M17628	-54576		B2	-1
-18348	-54577		A1	-11,-13,-14-15-17,-18-19
-18349	-54575		A1	-11,12,13,14-15,16,17,-18
-18350	-23634		A1	-11,-12
M17748	-54575		A2	-13
-18369	-54586		A1	-11,-13,-15,-16,-17,-19
-18346	-54575		A1	-11,-13,-15
-18356	-54575		A2	-13-19-21,25,-26-27
LDW280M17769	LDW280-54575	SEE DWG.	A1	-11

NAS 9-1100

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LCD 1433 DEC. CCA-586

REASON FOR EO: ALSEP REQUIREMENT

DESCRIPTION OF EO: ADDED LTA-3(13) EFFECTIVITY TO DASH NO.*

GAEC EO RELEASE: JC 11/1/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LTA-3(13).		

DRAWING CHANGE REQ'D: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: ✓ REWORK | SCRAP
PRIORITY: C

APPROVED BY / DATE / D V.D.I. | SUPPORT | RELIAB. GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG | QUAL

DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 783

ISSUED BY E. RANSOM X7033 10/27 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 22.1 REV 3-66

ENGINEERING ORDER

DWG. NO. LDW280-17295 | EO NO. B5

CONTROL INFO NO. LDW280B2825

REMOVE REQUIREMENTS FOR LDW280-17295-13,-14,-19,-20,-21,-22,-23,-24,-25&-26 WHOSE N/A IS LOW280-23576 -(EFFECTIVE LTA-3 ONLY.)

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LCO1433 CCA-586 PKG. #13 ok. (5)
REASON FOR EO: DWG. ERROR-INCORRECT N/A			DESCRIPTION OF EO: REMOVED REQUIREMENTS FOR -13,-14-19-20,-21-22,-23, -24,-25&-26 WHOSE N/A WAS LOW280-23576.

GAEC EO RELEASE: VC 4/4/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3(13)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK | SCRAP ✓

APPROVED BY: DATE 4/4/68 | V.D.I. —

SUPPORT | RELIAB. GROUP

GROUP LEADER 4-4-68 | STRESS GROUP 4/3/68 | LIAISON ENGRG 4/3/68 | PROJ. ENGRG 4-4-68

PRIORITY: C

DRAWING TITLE: ANGLE-DESCENT STAGE-SCIENTIFIC EQUIP. SUPPORT LWR. DECK

DRAWING NO.: LDW280-17295

EO NO. B5

4-5-68 ISSUED BY E. RANSOM/G. HANSMANN X3352 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-17295 | EO NO. B6
CONTROL INFO NO. LDW280B3385

REMOVE REQUIREMENTS FOR LDW280-17295 -13, -14, -19, -20, -21, -22, -23, -24, -25, & -26 WHOSE N/A IS LDW280-54576

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 1433 CCA 586 PKG 13

REASON FOR EO: PARTS REPLACED DUE TO MSEP RECONFIGURATION.

DESCRIPTION OF EO: FOR -13, -14, -19, -20, -21, -22, -23, -24, -25, & -26, REMOVE LTA 3 REQUIREMENTS N/A LDW280-54576

(1) GAEC EO RELEASE: VC 5/23/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3 (13)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | REWORK | DISPOSITION OF PARTS: SCRAP ✓

APPROVED BY: GAP | DATE: 5/16/68 | G · VDI | SUPPORT | RELIAB. GROUP

GROUP LEADER: SSK 5-15-68 | STRESS GROUP: WH 5-17-68 | LIAISON ENGRG: GAP 5/17/68 | PROJ. ENGRG: 5-22-68

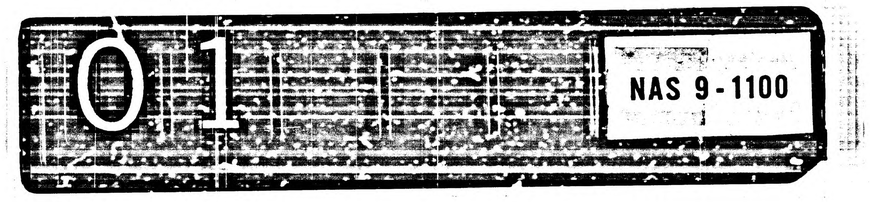
PRIORITY: C

DRAWING TITLE: ANGLE ~ D/S ~ SCIENTIFIC EQUIP SUPPORT ~ LOWER DECK

DRAWING NO.: LDW280-17295

EO NO.: B6

ISSUED BY 5/17/68 I. COTTER x3352 / P. THORJUSEN SECTION VDI GROUP NO. 335 PL 25



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17296-23	E	STIFFENER	AL ALLOY SH	QQ-A-250/12	7075	.040 x 2 1/2 x 22 7/8	T6	88	
		-22						.045 x 1 7/8 x 21 7/8			
		-21						.045 x 1 7/8 x 21 7/8			
		-19						.063 x 3 3/8 x 21 1/2			
		-17						.050 X 2 1/2 X 26 1/8			
		-15						.040 X 2 1/2 X 22 7/8			
		-14						.036 X 1 7/8 X 21 7/8			
		-13						.036 X 1 7/8 X 21 7/8			
		LDW280-17296-11	E	STIFFENER	AL ALLOY SH	QQ-A-250/12	7075	.063 X 3 3/8 X 21 1/2	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

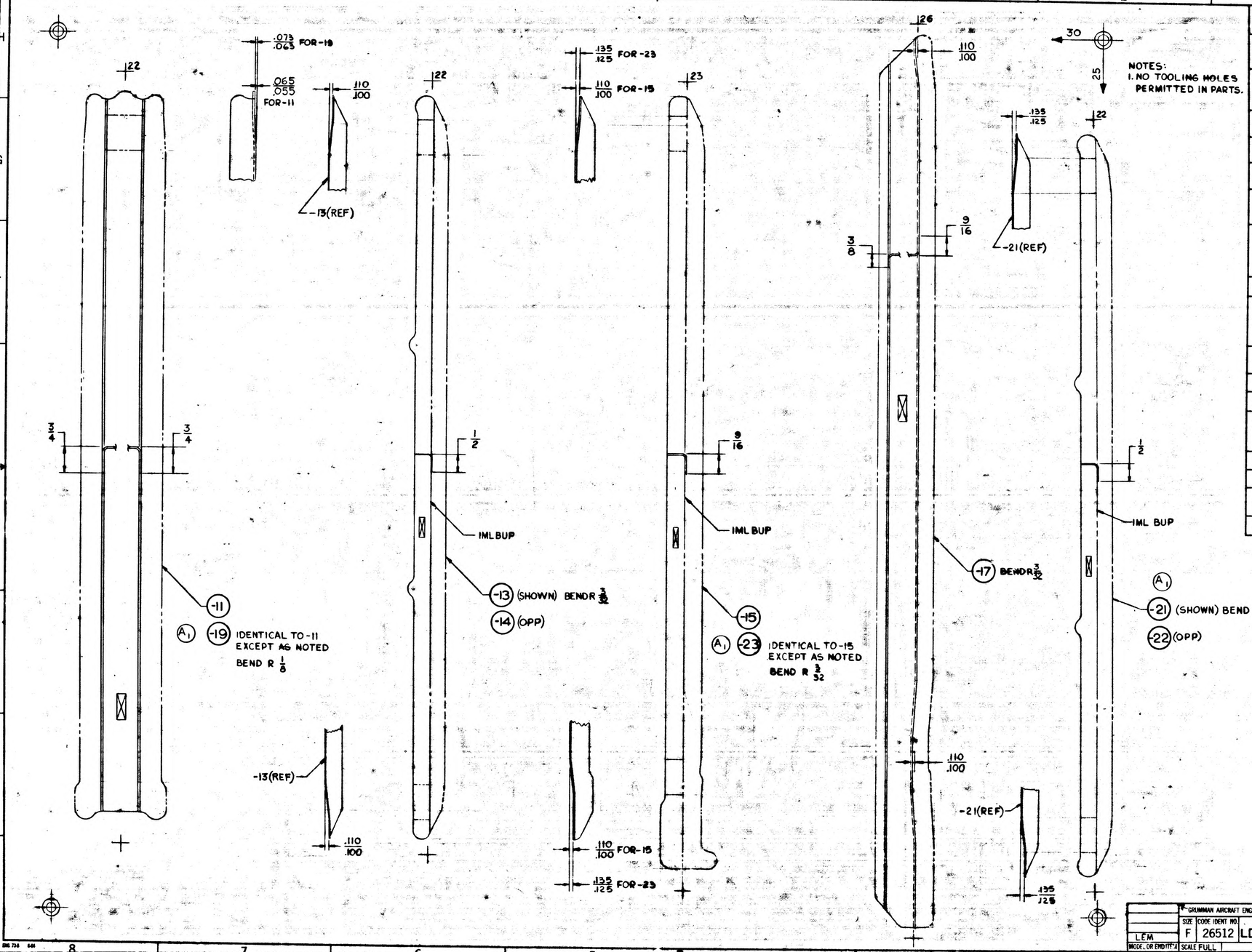
SIZE	CODE IDENT NO.		
B	26512	LDW280-17296	A

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100



MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED (✓) APPLY TO THIS DWG.

- RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY. ✓
- FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .008; .063R TO .250R ± .015; OVER .250R ± .030
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2.3 INP. THDS. BEYOND PERMISSIBLE
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0004 MAX MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES
- SURFACE ROUGHNESS 125 INCLUDING REAMED HOLES PER MIL-STD-10
- 250 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION IF .010 IN PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS
- SYMBOL ✓ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF AN, MAS & MS #1 #4 #7 RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED
- TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32 ✓

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
F	26512	LDW280-17296	A

LEM | MODL. OR ENDITM | SCALE FULL | SHEET 3.00

LDW280-17296 A

FOR PHOTO REPRODUCTION

NAS 9-1100

01

LEM	LDW280-23577	LEM-3(33)	1EA
↕	↕	LEM-2(32)	↕
LEM	LDW280-23577	LTA-3DR(46)	1EA
LDW280-17296-21,-22			

LEM				LEM	LDW280-25577	LEM-1(31)	2 EA	LEM	LDW280-25577	LEM-1(31)	1EA
↕				↕	LDW280-25577	LTA-8(18)	2 EA	LEM	LDW280-25577	LTA-8(18)	1EA
LEM	LDW280-23577	LEM-3(33)	2EA	↕	LDW280-25577	LTA-5(15)	2 EA	LEM	LDW280-25577	LTA-5(15)	1EA
↕	↕	LEM-2(32)	↕	LEM							
LEM	LDW280-23577	LTA-3DR(46)	2EA								
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17296-19,-23		GAEC SCH NO.		PART NO. LDW280-17296-11		GAEC SCH NO.		PART NO. LDW280-17296-13,-14,-15,-17		GAEC SCH NO. 51-2	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10	2.00	3.00					
REV	B	B	A	A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	
LAST DASH NO. USED	-23

GRUMMAN REL INFO B

PRIM NO. 66(01)

207 ME-1 B 9/4/3 3-31-66

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±½°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 LINE ITEM I DOCUMENTATION TYPE II

DRAWN BY	C CASTELLANO 3-1-66	RELIABILITY	
LAYOUT BY	J. CINO		
CHECKED BY	D. FASS 3-10-66		
GR LEADER	[illegible] 3/4/66		
VEH DES INT	[illegible] 3/7/66		
STRUCTURES	[illegible] 3/1/66	PROJ ENGR	[illegible] 4-1-66
STRUCTURES	[illegible] 3/7/66	REL GROUP	[illegible] 4-1-66
WEIGHT	[illegible] 3/7/66		

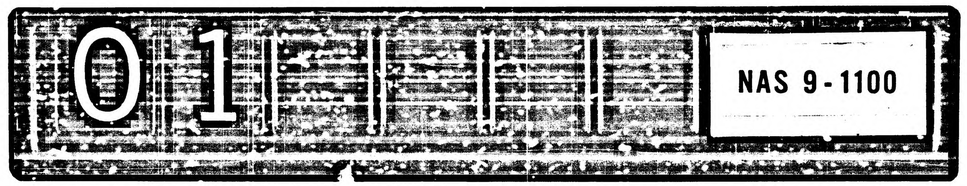
GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER
DESCENT STAGE, SCIENTIFIC EQUIPMENT
SPT INBD BEAM

SIZE	CODE IDENT NO.		
B	26512	LDW280-17296	B

SCALE NONE SHEET 1.00 OF 4

9-64



REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1,1.10,2, 3.						EO A1	ADDED -19, -21, -22, & -23. SH 1 OF 4 WAS SH 1 OF 3. ADDED SH 1.10	LTA-3, LEM-2, THRU LEM-6	NOT	REQD	E. JESINGER 3-28-69		
B	1	1.00							INC LEO 280-301	LM-7 THRU LM-15					
	2	1.00							INC LEO 280-541	LTA-3 D/R (16)					
	3	1.00,							INC EO B3	LM-4 THRU LM-15					
	4	1.00		D					(2) INC LEO 280-763	LTA-3		H.D.			

CHG APPROVED	LTR	GROUP LDR	V.D.I.	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
	B						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17296	B

SCALE NONE SHEET 1.10 (B)

ENG 77.16 3-66

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

BMG 33.2 REV 3-65

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A6132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | LCD19-1242 | 2 C

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R (46)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: NOT REWORK; REQD SCRAP

APPROVED BY								
DATE	3/28/67							
5	YDI	SUPPORT	RELIAB GROUP	GROUP LEADER 4/5/67	STRESS GROUP 4/4/67	LIAISON ENGRG	PROJ ENGRG 3 30 67	

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 541

ISSUED BY G. BECKER/J. STRAKOSCH X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 10-63

ENGINEERING ORDER

DWG. NO. LDW280-17296 | EO NO. B3

CONTROL INFO NO. LDW280A8651

REMOVE REQ'MTS -19, -21, -22 & -23 N/A & EFF LM-4(34) THRU LM-15(45)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | 4 LCD-1433 CCA 586 | 3

REASON FOR EO: REDESIGN FOR ALSEP

DESCRIPTION OF EO: REMOVED REQ'MTS -19-21-22 & -23 N/A & EFF LM-4(34 THRU LM-15(45)

GAEC EO RELEASE: SF 9/9/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM4(34)	
LM		THRU	
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK | SCRAP ✓

PRIORITY: C

DRAWING TITLE: STIFFENER-D/S-SCIENTIFIC EQUIPMENT SPT. INBD BEAM

DRAWING NO.: LDW280-17296

EO NO.: B3

APPROVED BY	DATE	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG
[illegible]	9/7	VDI	9/7/67	9/8/67		9/8

9/27
ISSUED BY F. MADDEN/J. STRAKOSCH X1153 GROUP VEH. DES. INT.

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.2 REV 3-65

ENGINEERING ORDER

DWG. NO. LE0280		EO NO. 763
CONTROL INFO NO. LDW280A9814		

REMOVE LTA-3(13) EFFECTIVITY FROM ALL DASH NOS. (*) OF THE FOLLOWING DWGS:

DWG. NO.	N/A	TITLE	CHG. NO.	DWG. NO.	N/A	TITLE	CHG. NO.
LDW280-23569	LDW280-23510	SEE DWG.	B8	LDW280-17714	LDW280-23575	SEE DWG.	C4
-23576	-23569		D2	M17266	-23575		C4
-23577	-23569		B3	-23566	-23509		B9
-23575	-23569		C5	-17879	-23566		B2
-23578	-23569		B9	-17891	-23586		A5
-23586	-23569		B9	-17708	-23586		B4
M17272	-23569		B4	-17739	-23586		C1
-17290	-23576		B4	-23593	-23509		B5
-17711	-23576		C6	-17719	-23634		B4
-17792	-23576		B7	-17878	-23566		B2
-17716	-23576		B4	-17881	-23566		B2
M17606	-23576		B8	M17625	-23566		B3
M17607	-23576		B3	M17626	-23566		B5
				LDW280-17884	LDW280-23579	SEE DWG.	B4
-17291	-23577		B4				
-17296	-23577		B4				
-17713	-23577		C4				
-17715	-23577		B4				
M17629	-23575		B2				
M17605	-23575		B2				
-17712	-23575		A5				
-17294	-23575		B4				
M17640	-23575		B6				
LDW280-17289	LDW280-23575		C4				

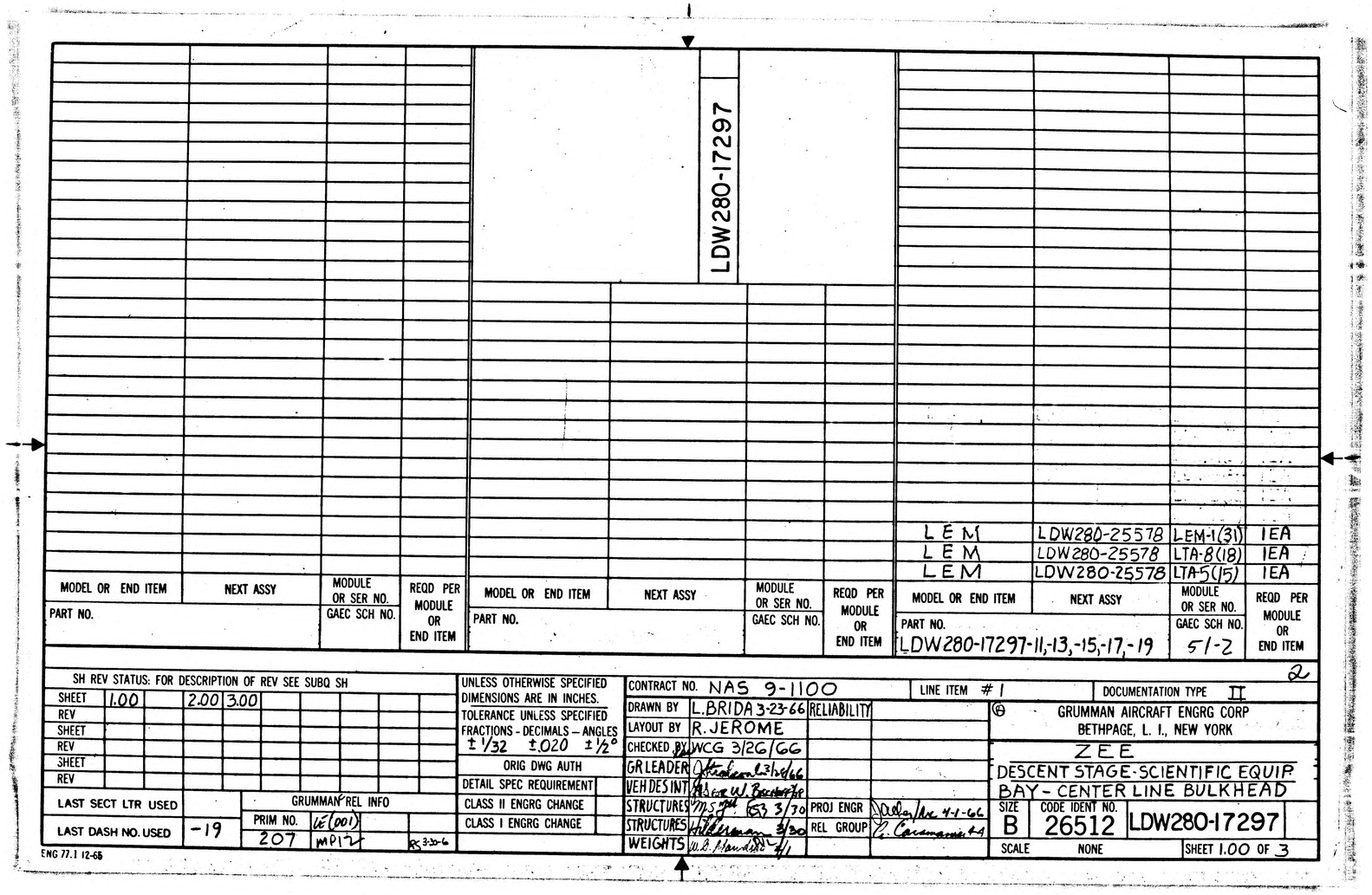
NAS 9-1100

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LCD1433 CCA 586 (R) 5

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
PARTS NOT REQ'D.	REMOVE LTA-3(13) EFFECTIVITY FROM - *	VK 10/26/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP	APPROVED BY / DATE								
										SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG	[redacted]
LM		LTA-3(13)		✓			✓	D	V01			10/20/67	10/21/67		10/27/67	10-26-67
				PRIORITY	DRAWING TITLE			DRAWING NO.								EO NO.
				C	NOTED			LE0280								763

ISSUED BY 10/27 E. RANSOM X7033 SECTION VEH. DES. INT. GROUP NO. 335 PL 25



MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-25578	LEM-1(31)	IEA
LEM	LDW280-25578	LTA-8(18)	IEA
LEM	LDW280-25578	LTA-5(15)	IEA
PART NO. LDW280-17297-11,-13,-15,-17,-19		GAEC SCH NO. 51-2	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00		2.00	3.00					
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED		GRUMMAN REL INFO		
LAST DASH NO. USED	-19	PRIM NO.	LE(001)	
		207	MP127	RC 3-30-6

ENG 77.1 12-65

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±½°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100			LINE ITEM #1		DOCUMENTATION TYPE II
DRAWN BY	L.BRIDA 3-23-66	RELIABILITY		GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK	
LAYOUT BY	R.JEROME				
CHECKED BY	WCG 3/26/66			ZEE	
GR LEADER	[illegible] 3/26/66			DESCENT STAGE-SCIENTIFIC EQUIP BAY - CENTER LINE BULKHEAD	
VEH DES INT	[illegible] 3/30				
STRUCTURES	[illegible] 3/30	PROJ ENGR	[illegible] 4-1-66	SIZE B	CODE IDENT NO. 26512
STRUCTURES	[illegible] 3/30	REL GROUP	[illegible] 4-1	LDW280-17297	
WEIGHTS	[illegible] 4/1			SCALE NONE	SHEET 1.00 OF 3

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17297-19	E	ANGLE	AL ALLOY SH	QQ-A-283	7075	.020 x 1 5/8 x 8 1/4	T6	88	
		-17	E	CHANNEL				.032 x 2 1/4 x 25 1/2			
		-15	E	ZEE				.032 x 2 1/4 x 22			
		-13	E	CHANNEL				.032 x 2 3/8 x 25 1/2			
		LDW280-17297-11	E	ZEE	AL ALLOY SH	QQ-A-283	7075	.032 x 2 1/4 x 22	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP14-9030
T6	AL HEAT TREAT	MIL-H-6088

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17297

SCALE NONE SHEET 2.00

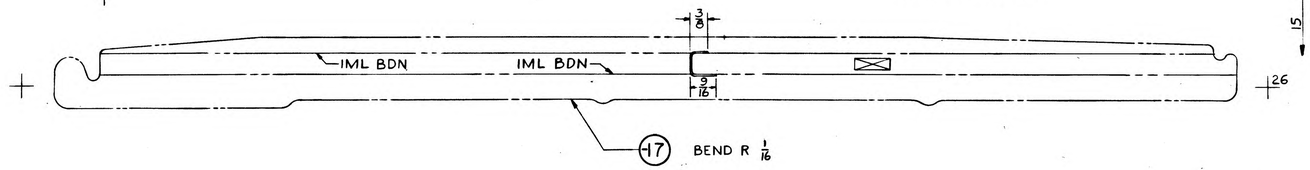
ENG 77.2 7-65

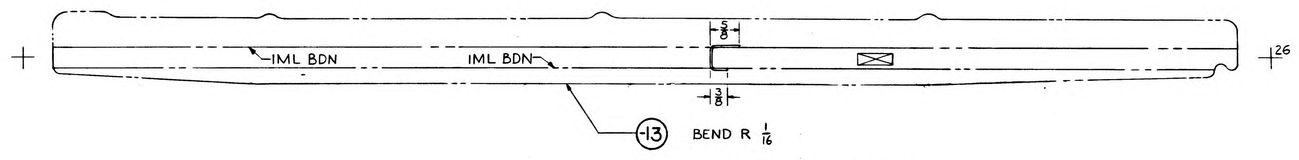
01

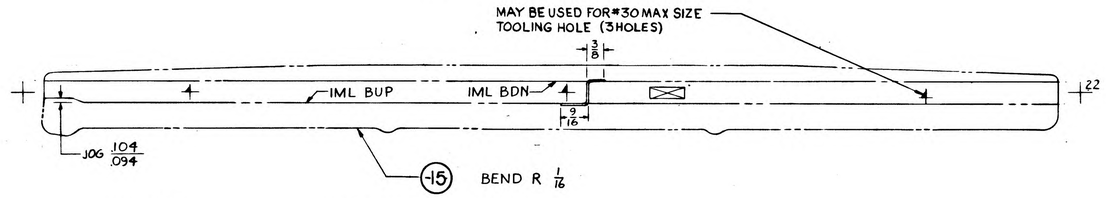
NAS 9-1100

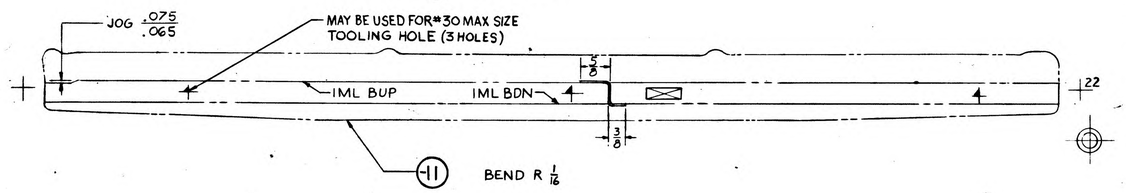
LDW280-17297

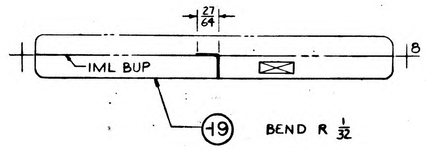
NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS (EXCEPT AS NOTED)











MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ * USE BOTH SIDES IF NECESSARY.	√
FILLET AND INSIDE CORNER RADII TOLERANCES .010R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .020	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED ⌀ MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125/ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200/ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	√

	* GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK		
LEM	SIZE D	CODE IDENT NO. 26512	LDW280-17297
MODEL OR END ITEM	SCALE FULL		SHEET 3.00

FOR PHOTO REPRODUCTION

LDW280-17297

01 NAS 9-1100

LEM	LDW280-25579	LEM-1(31)	1
LEM	LDW280-25579	LTA-5(15)	1

PART NO. LDW280-17298-11

LEM	LDW280-28586	LEM-1(31)	1EA
LEM	LDW280-28586	LTA-8(18)	1EA
LEM	LDW280-25586	LTA-5(15)	1EA

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17298-12, 14, 16, 18 & 20		GAEC SCH NO.	

LEM	LDW280-25579	LEM-1(31)	1EA
LEM	LDW280-28579	LTA-8(18)	1EA
LEM	LDW280-25579	LTA-5(15)	1EA.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17298-13, 15, 17 & 19		GAEC SCH NO. 51-2	

LEM	LDW280-28579	LTA-8(18)	1						
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM						
PART NO. LDW280-17298-21		GAEC SCH NO.							

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00					
REV	A	A	A	A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	
LAST DASH NO. USED	-21

GRUMMAN REL INFO A

PRIM NO.	(E/601)		
207	MP.17		RS 4-1

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.010 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 LINE ITEM NO. 1 DOCUMENTATION TYPE II

DRAWN BY	C. Costellano 3-28-66	RELIABILITY	
LAYOUT BY	C. DeAngelis 3-31-66		
CHECKED BY	WCG 3/31/66		
GP LEADER			
VEH. DES. INT			
STRUCTURE		PROJ ENGR	
STRUCTURE		REL GROUP	
WEIGHT	W.S.P. 4/4		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER
DESCENT STAGE - SCIENTIFIC EQUIP.
BAY - END CLOSURE

SIZE	CODE IDENT NO.		
B	26512	LDW280-17298	A

SCALE NONE SHEET 1.00 OF 4

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1, 1.10						EO A1	IN B/M, MODEL BLOCK, -12 THRU -20, ADDED LTA-5(15) REMOVED LTA-3(13) EFF. SH 1 OF 4 WAS SH 1 OF 3	LTA-5(15) LTA-3(13)	NOT	REQD	P. CARTSOS 6-5-66		
	2	1.00 & 1.10						LEO 280-157	FOR ALL DASH NOS NEXT ASSY LDW280-28586 WAS LDW280-25586	LTA-8(18) LEM-1(31)	NOT	REQD	[illegible] 7-14-66		
	3	1.00, 1.10, 2.00 & 3.00						E.O. A3	IN FLD. DWG. & B/M ADDED -21. FOR-11 REMOVED EFF. LTA-8(18). FOR-13, -15, -17 & -19 ON LTA-8(18) N/A LDW28028579 WAS LDW280-25579	LTA-8	✓	S.J.	BRODA 8-8-66		

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURE	STRUCTURE	WEIGHTS
	A					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17298	A

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01 NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17298-21	E	STIFFENER	AL. ALY. SH.	QQ-A-250/12	7075	.063 x 2 1/8 x 20 1/4	T6	88	
		LDW280-17298-20	E	CAP	AL ALY EXTR	QQ-A-200/11	7075 T6511	DIE # 89479 X 9 3/4	NONE	88	
		-19		CAP	AL ALY EXTR	QQ-A-200/11	7075 T6511	DIE # 89479 X 9 3/4	NONE		
		-18		STIFFENER	AL ALY SH	QQ-A-250/12	7075	.028 X 1 7/8 X 8 3/4	T6		
		-17		STIFFENER				.028 X 1 7/8 X 8 3/4			
		-16		STIFFENER				.028 X 2 X 13 3/4			
		-15		STIFFENER				.028 X 2 X 13 3/4			
		-14		STIFFENER				.063 X 2 1/8 X 25			
		-13		STIFFENER				.063 X 2 1/8 X 25			
		-12		STIFFENER				.063 X 2 1/8 X 20 1/4			
		LDW280-17298-11	E	STIFFENER	AL ALY SH	QQ-A-250/12	7075	.063 x 2 1/8 X 20 1/4	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL. HT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

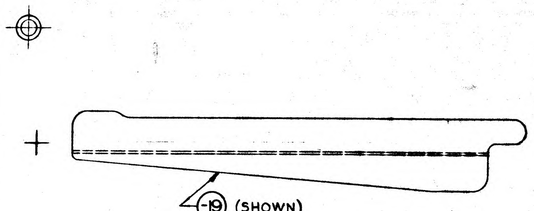
SIZE	CODE IDENT NO.		
B	26512	LDW280-17298	A

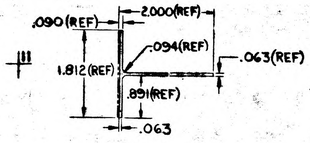
SCALE NONE SHEET 2.00

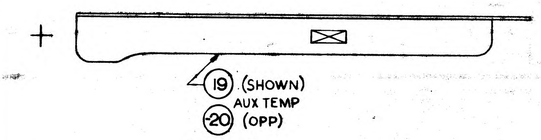
-65

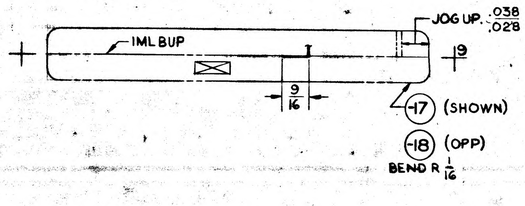
01

NAS 9-1100

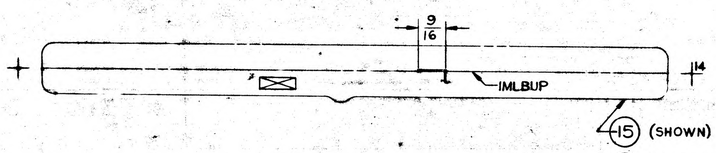


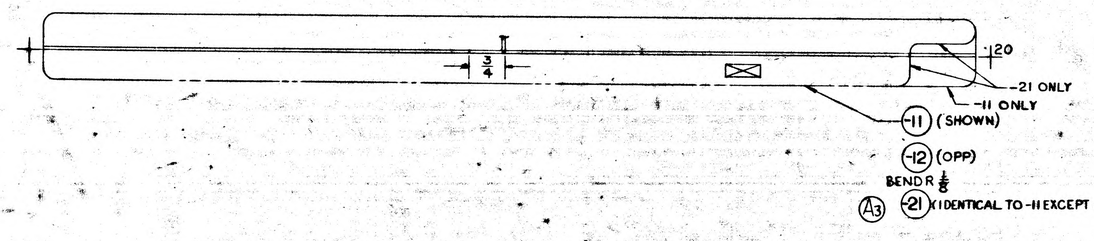




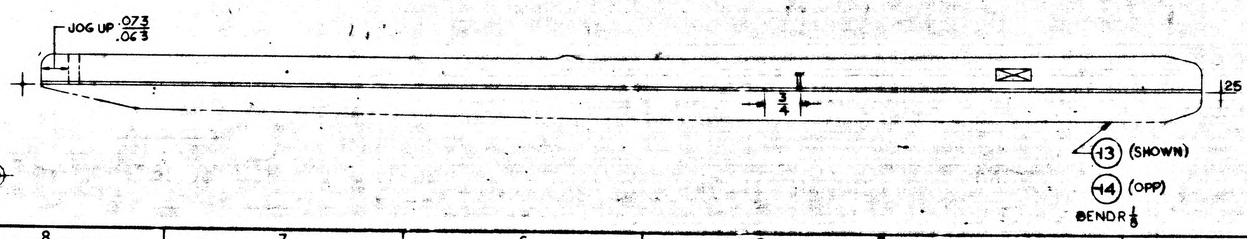


NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS





A3 -21 (IDENTICAL TO -11 EXCEPT AS NOTED)



MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

NUMBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .018R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 MIN. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, MS & NS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
F	26512	LDW280-17298	A

LEM — MODEL OR END ITEM — SCALE FULL — SHEET 3.00

FOR PHOTO REPRODUCTION

LDW280-17298A

NAS 9-1100

01

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO280		EO NO. 157
CONTROL INFO NO. LDW280-7827		

FOR ALL DASH NO'S

CHG. NO.	DWG AFFECTED:	DWG TITLE
A2	LDW280-17293	WEB, DESC STAGE - SCIENT. EQUIP. BAY - END CLOSURE
A2	LDW280-17298	STIFF, DESC. STAGE - SCIENT. EQUIP. BAY - END CLOSURE
A3	LDW280-17299	PLATE, DESC. STAGE - SCIENT EQUIP. BAY - END CLOSURE
A2	LDW280M17548	FITTING, DESC. STAGE - SCIENT EQUIP BAY - END CLOSURE

FOR LTA-8(18) & LEM-1(31) N/A LDW280-28586
WAS LDW280-25586

QUANTITIES REMAIN THE SAME

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	DESCRIPTION OF EO	GAEC EO RELEASE
REASON FOR EO: TO ACCOM. RTG INSTL			FOR ALL DASH NO'S N/A LDW280-28586 WAS LDW280-25586.	AP 6/14/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM	LTA-8(18)		
	LEM-1(31)		

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
✓		NOT REQD		GAS	6/21/66	VDI			7/11/66	23 June	7-2-66

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO280	157

ISSUED BY C. De Angelis 6/17/66 SECTION VEH. DES. INT. GROUP NO. 335 PL 35

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	
LEM	LDW280-28586	LEM-1(31)	2 EA.
	LDW280-28586	LTA-8(18)	
	LDW280-25586	LTA-5(15)	
	LDW280-28579	LEM-1(31)	
	LDW280-28579	LTA-8(18)	
LEM	LDW280-25579	LTA-5(15)	2 EA.
PART NO. LDW280-17299-13,-15 & -21			

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	
LEM	LDW280-28586	LEM-1(31)	1 EA
LEM	LDW280-28586	LTA-8(18)	1 EA
LEM	LDW280-25586	LTA-5(15)	1 EA
LEM	LDW280-28579	LEM-1(31)	1 EA
LEM	LDW280-28579	LTA-8(18)	1 EA
LEM	LDW280-25579	LTA-5(15)	1 EA
PART NO. LDW280-17299-11,-17 & -19		51-2	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10	2.00	3.00					
REV	A	A	A	A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	
LAST DASH NO. USED	-21

GRUMMAN REL INFO

PRIM NO. 207 (001) MP-A 8-20-6

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 | LINE ITEM I | DOCUMENTATION TYPE II

DRAWN BY	R.WISBET 3-4-66		
LAYOUT BY	DE ANGELIS 3-26-66		
CHECKED BY	[illegible] 3-16-66		
GR.LEADER	[illegible] 3/9/66		
VEH.DES.INT	[illegible] 3/9		
STRUCTURES	[illegible] 3/31	PROJ ENGR	[illegible] 4-4-66
STRUCTURES	[illegible] 3/31	REL GROUP	[illegible] 4-6-66
WEIGHTS	[illegible]		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

GUSSET
DESCENT STAGE SCIENTIFIC EQUIPMENT-END CLOSURE

SIZE	CODE IDENT NO.		
B	26512	LDW280-17299	A

SCALE NONE | SHEET 1.00 OF 4

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10 2.00, 3.00						EOA1	IN B/M & F/D, ADDED LDW280-17299-21 PLATE (2) SH 1.00 OF 4 WAS SH 1.00 OF 3, ADDED SH 1.10	LTA-5,-8 LEM-1	NOT	REQD	A. [illegible] 6/18/66		
	2	1.00, 1.10 2.00, 3.00						EOA2	IN F/D ON -11 REVISED THE PERIMETER.	LTA-5,-8 LEM-1	✓				
	3	1.00 & 1.10						LEO 280-157	FOR ALL DASH NUMBERS NEXT ASSY LDW280-28586 WAS LDW280-25586	LTA-8 & LEM1	NOT	REQD	A. BROWERS 7-26-66		
	4	1.00 & 1.10						(R)	REF LEO-280-157 FOR ALL DASH NOS NEXT ASSY LDW280-28579 DU LEM-1 (31) & LTA-8 (18) WAS LDW280-25579	NOT REQD	NOT	REQD S.J.			

CHG APPROVED	LTR	GROUP LDR	VEH. DES. INT	STRUCTURES	STRUCTURES	WEIGHTS
	A					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17299	A

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17299-21	E	PLATE	AL ALLOY SH	QQ-A-250/12	7075-T6	.056 X 2 X 4	NONE	88	
		-19		GUSSET				.032 X 2 1/2 X 4			
		-17						.032 X 1 3/8 X 3 1/8			
		-15						.050 X 1 3/8 X 3 1/8			
		-13						.050 X 1 3/8 X 3 1/8			
		LDW280-17299-11	E	GUSSET	AL ALLOY SH	QQ-A-250/12	7075-T6	.032 X 3 1/8 X 3	NONE	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17299	A

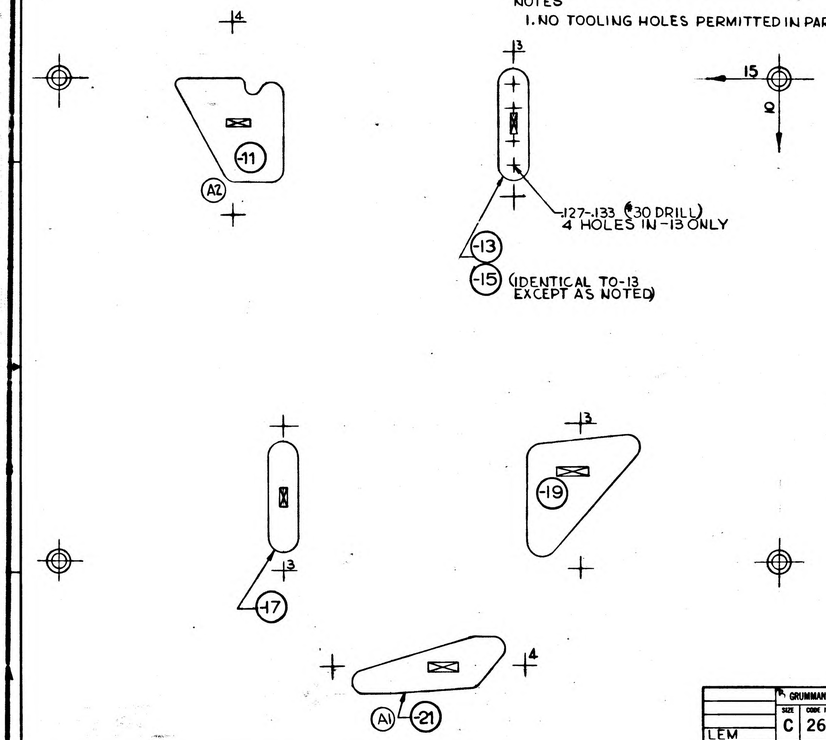
SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

NOTES
1. NO TOOLING HOLES PERMITTED IN PARTS



MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

- RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED — USE BOTH SIDES IF NECESSARY.
- FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .008; .063R TO .250R ± .015; OVER .250R ± .030
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED ⌀ MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES
- 125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
- 250 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED ⊙ IS
- SYMBOL ⌐ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF AN, MS & NAS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.
- TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32

	GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LEM	SIZE C	CODE IDENT NO. 26512	LDW280-17299	A
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

LDW280-17299 A

4 3 2 FOR PHOTO REPRODUCTION 1 K2

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO280 | EO NO. 157
CONTROL INFO NO. LDW280-7827

FOR ALL DASH NO'S

CHG. No.	DWG AFFECTED:	DWG TITLE
A2	LDW280-17293	WEB, DESC STAGE - SCIENT. EQUIP. BAY - END CLOSURE
A2	LDW280-17298	STIFF, DESC. STAGE - SCIENT. EQUIP. BAY - END CLOSURE
A3	LDW280-17299	PLATE, DESC. STAGE - SCIENT EQUIP. BAY - END CLOSURE
A2	LDW280M17548	FITTING, DESC. STAGE - SCIENT EQUIP BAY - END CLOSURE

FOR LTA-8 (18) & LEM-1 (31) N/A LDW280-28586
WAS LDW280-25586
QUANTITIES REMAIN THE SAME

2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: TO ACCOM. RTG INSTL

DESCRIPTION OF EO: FOR ALL DASH NO'S N/A LDW280-28586 WAS LDW280-25586.

GAEC EO RELEASE: MP 7/11/66

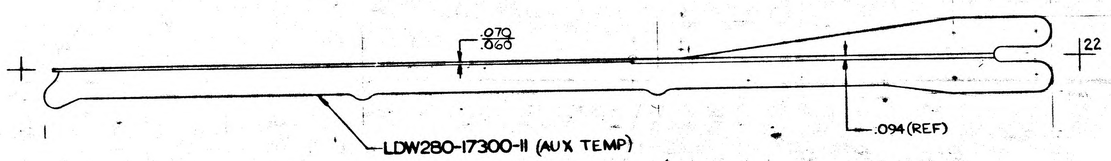
MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM	LTA-8(18)		
	LEM-1(31)		

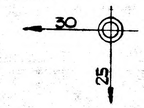
DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REQD REWORK | SCRAP
APPROVED BY: GMS 6/21/66 | DATE | VDI
SUPPORT | RELIAB. GROUP | GROUP LEADER | STRESS GROUP 7/11/66 | LIAISON ENGRG | PROJ ENGRG
PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 157

ISSUED BY C. De Angelis 6/14/66 SECTION VEH. DES. INT. GROUP NO. 335 PL 35

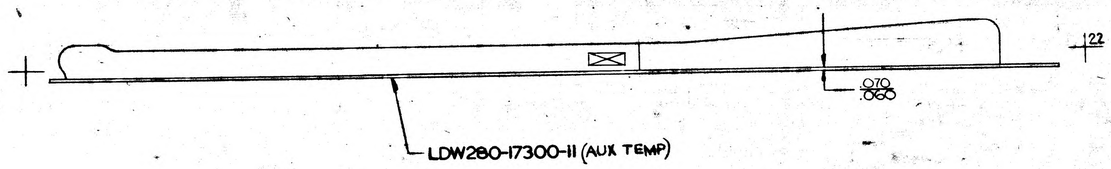
01

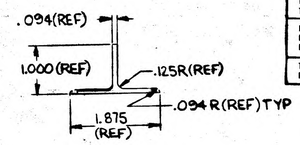
NAS 9-1100





NOTES:
1. NO TOOLING HOLES PERMITTED IN PART.
2. -11 TO BE CHEM-MILLED, OPTIONAL METHOD OF MFR IS MACHINING.





MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

- RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED
- FILLET AND INSIDE CORNER RADII TOLERANCES
  .016R TO .062R ± .000
  .063R TO .250R ± .005
  OVER .250R ± .000
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES
- 125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
- 200 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INSTALLATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED AS
- SYMBOL ✓ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF AN, MS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED
- TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	LDW280-17300
F	26512	

LEM — MODEL OR END ITEM — SCALE FULL — SHEET 3.00

LDW280-17300

LDW280-17300

LDW280-17300

2 (FOR PHOTO REPRODUCTION) 1

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17303-15&-17		GAEC SCH NO. 50-2	
LEM	LDW280-23567	LEM-6(36)	1 EA
LEM	LDW280-23567	LEM-5(35)	1 EA
LEM	LDW280-23567	LEM-4(34)	1 EA
LEM	LDW280-23567	LEM-3(33)	1 EA
LEM	LDW280-23567	LEM-2(32)	1 EA
LEM	LDW280-23567	LTA-3(13)	1 EA
LEM	LDW280-25567	LTA-8(18)	1 EA
LEM	LDW280-25567	LTA-5(15)	1 EA
LEM	LDW280-51567	LEM-1(31)	1 EA

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00	1.10	2.00	3.00						
REV	A	A	A	A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	
LAST DASH NO. USED	-17

GRUMMAN REL INFO A
PRIM NO. 207
VE(001) MP12

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 LINE ITEM 1 DOCUMENTATION TYPE II

DRAWN BY	F. HACKERT 1-5-66	RELIABILITY	
LAYOUT BY	[illegible] 1/11/66		
CHECKED BY	[illegible] 1-11-66		
GP LEADER	[illegible]		
VEH DES INT	[illegible]		
STRUCTURES	[illegible]	PROJ ENGR	[illegible] 2/26
STRUCTURES	[illegible]	REL GROUP	[illegible] 3-1-66
WEIGHTS	[illegible]		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STRUT
DESCENT STAGE-S-BAND ANTENNA
LOWER SUPPORT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17303	A

SCALE NONE SHEET 1.00 OF 4

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 2.00 & 3.00						✓	EO A1	REMOVED-11 & 13 IN FLD & B/M & "SEE NOTE 2" IN B/M REMOVED NOTE 2 IN FLD, ADDED NOTE 3 IN FLD Ⓡ ADDED SH 1.10 SH 1.00 OF 4 WAS SH 1.00 OF 4	LTA-5,-8,-3 LEM-1 THRU-6		✓ 48	ARATOLI 4-14-66	X	X

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 5-64

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17303	A
SCALE NONE		SHEET 1.10	

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17303-17	E	STRUT	TITANIUM ALY SH	MIL-T-9046D	GAL-4V	.036 X 1 3/4 X 14 1/8	SEE NOTE 3	NONE	
		LDW280-17303-15	E	STRUT	TITANIUM ALY SH	TYPE III COMP'C	SOLUTION TREATED	.056 X 1 1/2 X 15 3/8	SEE NOTE 3	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17303	A

SCALE NONE SHEET 2.00

ENG 77.2 7-65

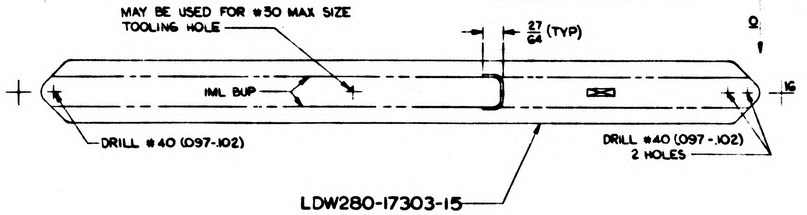
01

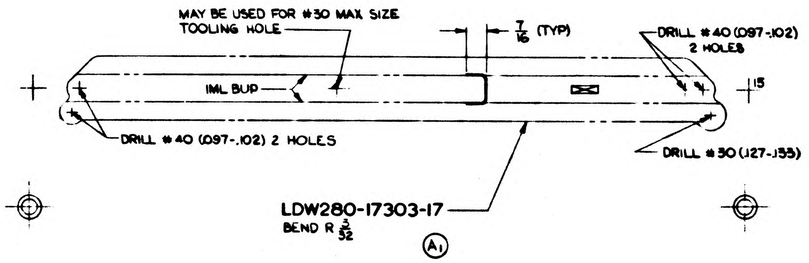
NAS 9-1100

3. MATERIAL TO BE PURCHASED IN THE ANNEALED CONDITION

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS EXCEPT AS NOTED.

~~2. AFTER FORMING, AGE AT 375°±5°F FOR 4 TO 6 HR. AIR COOL TO ROOM TEMP.~~





	GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK			
	SIZE	CODE IDENT NO.		
LEM	C	26512	LDW280-17303	A
MODEL OR END ITEM	SCALE NONE		SHEET 3.00	

4 3 2 FOR PHOTOREPRODUCTION 1 K2

LDW280-17303-A

LDW280-17303-A

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO280 | ED NO. 280
CONTROL INFO NO. LDW280A0305

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-17303	B1	SEE DRAWING
-17611	B2	
-17612	A3	
-17613	B1	
-17614	C1	
-17617	C1	
-17618	B1	
-17619	B1	
-17620	A3	
-17621	B1	
-17622	A1	
-17623	B1	
-17624	B1	
-17630	A2	
-17631	A2	
-17633	A2	
-17634	A1	
-17636	B1	
-17637	B2	
-17640	B1	
-17642	B1	
-17645	B1	
-17647	A2	
-17649	A1	
-17650	A1	
-17652	A1	
-17654	B1	
-17655	B1	
-17656	A1	
LDW280-17659	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: ADDITIONAL REQUIREMENTS

DESCRIPTION OF EO: FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.

GAEC EO RELEASE: FR 9/27/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-7(37)	LEM-8(38) LEM-9(39)
LEM		LEM-10(40)	LEM-11(41) LEM-12(42)
LEM		LEM-13(43)	LEM-14(44) LEM-15(45)

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REQ'D | RE WORK | SCRAP
APPROVED BY / DATE: 9/28 AK; 9/26/66 10-4; 9/26/66 RMG; 9-26-66 [illegible]
V.D.I. | SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG

PP TY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 280

ISSUED B: M. GREY / J. STRAKOSCH X1153 SECTION VEHICLE DESIGN INT. GROUP NO. 280 PL 35 ENF.

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1007

CONTROL INFO NO. LDW280B-3846

ADD TM-5/R (65) EFF. REQTS TO ALL DASH NOS. * OF THE FOLLOWING DWGS.

DWG NO	N/A	TITLE	CHG. NO.	
LDW280-23689 *	LTM280-50608	SEE DWG	A3	✓
LDW280-17397 *	LDW280-23689	SEE DWG	B3	✓
LDW280-17303 *	LTM280-50608	SEE DWG	B2	✓
LDW280M17355 *	LTM280-50608	SEE DWG	A2	

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓	LCD 3075 CCA 586 * PKG # 5	(5)

REASON FOR EO: INCLUDE S-BAND ANTTENNA ON TM-5/R

DESCRIPTION OF EO: ADDED TM-5/R (65) EFFECTIVITY REQUIREMENTS TO DASH NUMBERS *.

GAEC EO RELEASE: JK 6/13/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
LM		TM-5/R(65)		✓		NOT	REQ'D		6/10/68			6-8-68	6/10/68	6/10/68	6-13-68
								VDI.							

PRIORITY: C

DRAWING TITLE: SEE DWG

DRAWING NO.: LEO-280

EO NO.: 1007

053168

ISSUED BY W. MANUK x3352 SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

ENG 22.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1447

CONTROL INFO NO. LDW280B7393

FOR THE DWGS LISTED BELOW DELETE LM-15 (45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17278 ✓	E4	SEE DWG
-17279 ✓	B3	
-17294 ✓	C1	
-17303 ✓	B3	
-17306	B5	
-17307	B6	
-17310	C1	
LDW280-17321	A3	SEE DWG

* APPLICABLE DASH NOS

(5)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCQ3587 PKG 50 PG. 7 CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM -*

EO RELEASE: 5/6/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	BASIC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: BUYER APPR	DRAWING CHANGE REQD: VENDOR ED	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP	APPROVED BY	DATE							
LM		LM-15(45)					✓	VDI	4/26/69			PSH 4-24-69	WJH 4/18/69		5/6/69	

PRIORITY: C | DRAWING TYPE: SEE DWG | DRAWING NO.: LEO 280 | EO NO.: 1447

052869 ISSUED BY: MENORAH / HORTON MN 426096 SECTION: VEH DES INT GROUP NO. 335 M 25

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NAS 9-1100

THIS IS AN ORIGINAL EO

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO 280 | EO NO. 1525

CONTROL INFO NO. LDW280B8078

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40) [redacted]
ADD LTA-11 ([redacted] 23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING NO *	TITLE	CHANGE NO
LDW280-17254 ✓	SEE DWG	C6
-17264 ✓		D4
-17278 ✓		E5
-17279 ✓		B4
-17294 ✓		C2
-17303 ✓		B4
-17306		B6
-17307		B7
✓ -17321		A4
LDW280-17323	SEE DWG	B4

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG 99 PG 243 (5)

REASON FOR EO
NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO
ON * ADDED LTA-11 ([redacted] 23) REQMTS

GAEC EO RELEASE: JR 8-4-69; JK 8/8/69; MK Bauman 8/7/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11([redacted])	
		(23)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: REWORK; SCRAP; NOT REQ'D

APPROVED BY									
DATE	7-28-69						8-2-69		
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		

PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO.: LEO 280
EO NO.: 1525

8-12-69 ISSUED BY G. HANSMANN X87222 (ML) SECTION VDI GROUP NO 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO 280		EO NO. 1669
CONTROL INFO NO. LDW 280B 7955		

FOR THE FOLLOWING DWG'S REMOVE LM 10(40) THRU LM 14(44) & LTA-11(23) EFFECTIVITY WITH THE NOTED NEXT ASSEMBLIES

PART NO *	NEXT ASSEM	TITLE	CHG #
LDW280-23567-5	LDW280-54509	SEE DWG	B7
LDW 280-23689-1	LDW 280-23567		A6
LDW 280-17303-15#17	LDW 280-23567		B5
LDW280-17397-1 #E-13	LDW280-23689		B6
LDW 280M17355-1	LDW280-23567		A5
LDW280M17554-1	LDW280 23567		A4
LDW 280 M 1807011	LDW 280-23567		A3

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 3994 PKG 80

REASON FOR EO: "S" BAND ANTENNA RELOCATED TO MESA

DESCRIPTION OF EO: FOR * REMOVED LM-10(40) THRU LM-14(44) & LTA-11(23) EFF.

GAEC EO RELEASE (5): AR 9-17-69; VDI 9/16/69; PROJ ENGR 9/17/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10 (40) THRU	
		LM-14 (44)	
		LTA-11 (23)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
			✓

APPROVED BY								
DATE	9-16-69			9/16/69	9/16/69		9/16/69	9/17/69
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C — NOTED

DRAWING TITLE

DRAWING NO.: LED 280

EO NO.: 1669

7-12-69 ISSUED BY M. FINNO / P THORNTON X87222 SECTION VDI GROUP NO. 335 PL 25

01

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LEM	LDW280-25539	LEM-1(31)	2
	LDW280-28539	LTA-8(18)	2
	LDW280-25539	LTA-5(15)	2
	LDW280-25533	LEM-1(31)	2
	LDW280-25533	LTA-8(18)	2
	LDW280-25533	LTA-5(15)	2
	LDW280-23539	LEM-6(36)	2
		LEM-5(35)	2
		LEM-4(34)	2
		LEM-3(33)	2
		LEM-2(32)	2
	LDW280-23539	LTA-3(13)	2
	LDW280-23533	LEM-6(36)	2
		LEM-5(35)	2
		LEM-4(34)	2
		LEM-3(33)	2
		LEM-2(32)	2
LEM	LDW280-23533	LTA-3(13)	2

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17306-17		GAEC SCH NO.	

LEM	LDW280-23525	LEM-6(36)	1
	LDW280-23525	LEM-5(35)	1
	LDW280-23525	LEM-4(34)	1
	LDW280-52525	LEM-3(33)	1
	LDW280-52525	LEM-2(32)	1
LEM	LDW280-23525	LTA-3(13)	1

PART NO. LDW280-17306-21

LEM	LDW280-25533	LEM-1(31)	1
	LDW280-25533	LTA-8(18)	1
	LDW280-25533	LTA-5(15)	1
	LDW280-23533	LEM-6(36)	1
		LEM-5(35)	1
		LEM-4(34)	1
		LEM-3(33)	1
		LEM-2(32)	1
LEM	LDW280-23533	LTA-3(13)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17306-15		GAEC SCH NO.	

LEM	LDW280-25521	LEM-1(31)	1
	LDW280-25521	LTA-8(18)	1
	LDW280-25521	LTA-5(15)	1
	LDW280-23521	LEM-6(36)	1
		LEM-5(35)	1
		LEM-4(34)	1
		LEM-3(33)	1
		LEM-2(32)	1
LEM	LDW280-23521	LTA-3(13)	1

PART NO. LDW280-17306-13

LEM	LDW280-25525	LEM-1(31)	2
	LDW280-25525	LTA-8(18)	2
	LDW280-25525	LTA-5(15)	2
	LDW280-23525	LEM-6(36)	1
	LDW280-23525	LEM-5(35)	1
	LDW280-23525	LEM-4(34)	1
	LDW280-52525	LEM-3(33)	1
	LDW280-52525	LEM-2(32)	1
LEM	LDW280-23525	LTA-3(13)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17306-11		GAEC SCH NO. 5-2-4	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.01	2.00	3.00					
REV	A	A	A	A					
SHEET	1.10								
REV	A								
SHEET									
REV									

LAST SECT LTR USED		GRUMMAN REL° INFO	
LAST DASH NO. USED	-21	PRIM NO.	(E(001)
		207	PP1 0

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100		LINE ITEM # 1	DOCUMENTATION TYPE II	
DRAWN BY	NARONIS 8-18-65	RELIABILITY	GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK	
LAYOUT BY	C. DeAngelis 11/65			
CHECKED BY	EG 11-13-65		SHIM	
GR. LEADER			DESCENT STAGE-H2O TANK SUPPORT	
VEH. DESINT				
STRUCTURES		PROJ ENGR	SIZE B / CODE IDENT NO. 26512 / LDW280-17306 / A	
STRUCTURES	Hilpert	REL GROUP	SCALE NONE / SHEET 1.00 OF 5	
WEIGHTS				

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LEM	LDW280-25539	LEM-1(31)	1
	LDW280-28539	LTA-8(18)	1
	LDW280-25539	LTA-5(15)	1
	LDW280-25533	LEM-1(31)	3
	LDW280-25533	LTA-8(18)	3
	LDW280-25533	LTA-5(15)	3
	LDW280-23539	LEM-6(36)	1
		LEM-5(35)	1
		LEM-4(34)	1
		LEM-3(33)	1
		LEM-2(32)	1
	LDW280-23539	LTA-3(13)	1
	LDW280-23533	LEM-6(36)	3
		LEM-5(35)	3
		LEM-4(34)	3
		LEM-3(33)	3
		LEM-2(32)	3
LEM	LDW280-23533	LTA-3(13)	3

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17306-19		GAEC SCH NO.	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET									
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED

LAST DASH NO. USED

GRUMMAN REL INFO

PRIM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS — ANGLES

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. | LINE ITEM | DOCUMENTATION TYPE

DRAWN BY

LAYOUT BY

CHECKED BY

PROJ ENGR

REL GROUP

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17306 A

SCALE NONE SHEET 101 OF

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10, 1.01, 2.00, 3.00						LEO 280-89	FOR ALL DASH NUMBERS THAT NEXT ASSEMBLED ON LDW 280-25539 CHANGED N/A TO LDW 280-28539 EFF. LTA-8(18) ONLY QTY REMAIN SAME. SHEET 1 OF 5 WAS 1 OF 4 ADDED SHEET 1.10	LTA-8	NOT	REQ'D	G. FOSTER 6-8-66		
	2	1.00, 1.10 & 3.00, 2.00					✓	E.O. A 2	FOR LTA-3, LEM-2 THRU-6 ONLY, RESTRICTED QUANT. OF -11 FROM 2 TO 1 & ADDED -21	LTA-3 LEM-2 THRU-6		-11			
	3	1.10, 1.00						LEO 280-118	FOR -11 & -21 CHANGED N/A TO LDW 280-52525 FOR LEM-2(32) & LEM-3(33).	LEM-2, -3	NOT	REQ'D $ ea			

CHG APPROVED	LTR	GROUP LDR	V.D.I.	STRUCT.	STRUCT.	WEIGHTS
	A					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW 280-17306	A

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17306-21	E	SHIM	AL ALY SH	QQ-A-250/4	2024-T3	.190x13/8x15/8	NONE	88	
		LDW280-17306-19	E	SHIM	AL ALLOY SH	QQ-A-250/4	2024-T3	.063x3/4x11/4	NONE	88	
		-17	↑	↑	↑	↑	↑	.071x3/4x11/8	NONE	88	
		-15	↓	↓	↓	↓	↓	.050x11/4x11/2	NONE	88	
		-13						.063x11/4x11/2	NONE	88	
		LDW280-17306-11	E	SHIM	AL ALLOY SH	QQ-A-250/4	2024-T3	.125x13/8x15/8	NONE	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP14-9030

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17306	A

SCALE NONE SHEET 2,00

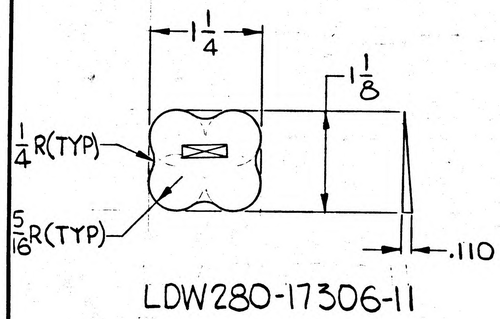
ENG 77.2 7-65

01

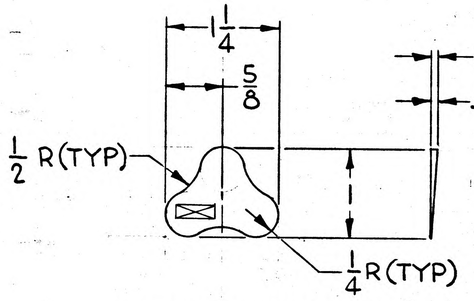
NAS 9-1100

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY. ✓

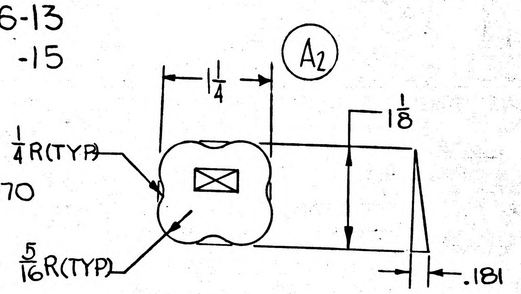


LDW280-17306-11

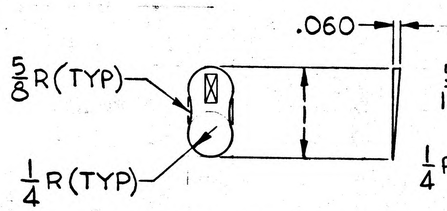


LDW280-17306-13
-15

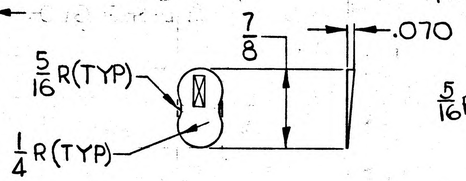
NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. SHIM MAY BE MADE FROM GRUMMAN STANDARD G120.



LDW280-17306-21



LDW280-17306-19



LDW280-17306-17

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
SIZE B	CODE IDENT NO. 26512	LDW280-17306	A
SCALE FULL		SHEET 3.00	

ENG 73.1 6-64

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO 280 | EO NO. 89
CONTROL INFO NO. LDW280-5898

ON THE FOLLOWING DRAWINGS FOR ALL DASH NUMBERS THAT NEXT ASSEMBLE ON LDW280-25539 CHANGE N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QUANTITIES REMAIN SAME

DWG No	CHANGE No	TITLE
LDW280-17306	A1	SEE DRAWINGS
LDW280-17278	B2	
LDW280-17277	B2	
LDW280-17221	A2	
LDW280-17219	A2	
LDW280-17175	A2	
LDW280-17174	A1	
LDW280-17169	A1	
LDW280-17167	A4	
LDW280-17139	B3	
LDW280-17408	A1	
LDW280-17407	A2	
LDW280-17400	A2	
LDW280-17356	A3	
LDW280-17355	A1	
LDW280-17348	A4	
LDW280-17344	A3	
LDW280-17341	B2	
LDW280-17329	A2	
LDW280-17328	A1	
LDW280M17342	A1	
LDW280M17247	B1	
LDW280M17139	B1	
LDW280M17115	B1	
LDW280M17110	B4	
LDW280-17448	A1	
LDW280-17450	A2	
LDW280-17447	A1	
LDW280-17445	A1	
LDW280-17439	A1	
LDW280-17410	A3	SEE DRAWINGS

NAS 9-1100

2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: CREATE N/A TO ACCOMMODATE LINE RUN

DESCRIPTION OF EO: FOR ALL DASH NUMBERS THAT NEXT ASSEMBLED ON LDW280-25539 CHANGED N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QTY REMAIN SAME

GAEC EO RELEASE: 2 | 4/13/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: NOT REWORK | REQD SCRAP

APPROVED BY	DATE
[illegible]	4/13
W.B.M.	4/6
[illegible]	4/8/66
VDI	4/6

RELIAB. GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG | QAC

4-4 | 4-13-66

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO 280

EO NO.: 89

ISSUED BY A. MEVORAH/J. STRAKOSCH SECTION VDI GROUP NO. 335 PL 35

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO 280		EO NO. 123
CONTROL INFO NO. LDW 280-6854		

FOR THE NOTED PART NOS., REVISE M/B AS FOLLOWS:

NOW: N/A LDW280-54525 EFF: LEM-4(34), LEM-5(35), LEM-6(36)
N/A LDW 280-23525 EFF: LTA-3(13), LEM-2(32), LEM-3(33)

WAS: N/A LDW280-23525 EFF: LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35), LEM-6(36)

PART NO *	CHG NO.	DWG TITLE
✓LDW280-17125-19	B4	SEE DWG
✓LDW280-17154-11,-12	A2	
✓LDW280-17306-11,-21	B1	
✓LDW 280-17307-11-15,19-21	B3	
LDW280-17429-11,-13	A3	
LDW 280M17113-3	D2	SEE DWG

2

DETAIL SPEC REQ	CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: WEIGHT CONTROL REQUIREMENTS

DESCRIPTION OF EO: REVISED M/B FOR PART NO.* WAS: N/A LDW280-23525 EFF: LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35), LEM-6(36)

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-4(34)	
		LEM-5(35)	
		LEM-6(36)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT REQD	

PRIORITY: C

DRAWING TITLE: NOTED

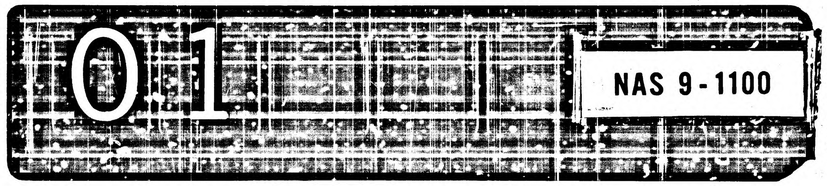
DRAWING NO.: LEO 280

APPROVED BY	DATE	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG
[illegible] WBM	5/13/66 5/27					
VDI						

GAEC EO RELEASE: [illegible] 6-6-66

EO NO. 123

ISSUED BY G. BECKER/J. STRAKOSCH X1153 SECT' 1 DESIGN INT GROUP NO. 335 PL 35



GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.2 REV 3-66

DWG NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A 5132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17273		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG		LCD19-1242	2

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 4/4/67 C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R (46)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: NOT REWORK | SCRAP

APPROVED BY: GAC | DATE 3/28/67 | 5 YDI | SUPPORT | RELIAB. GROUP

GROUP LEADER: JHS 4/4/67 | STRESS GROUP: WH 4/4/67 | LIAISON ENGRG: | PROJ ENGRG: 3.30.67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 541

ISSUED BY G. BECKER/J. STARKOSCH X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LE0280		EO NO. 626
CONTROL INFO NO. LDW280A7168		

REVISE N/A FOR NOTED EFF AS SHOWN. QUANTITIES REMAIN THE SAME

DWG No *	EFF	N/A	WAS**	CH.LTR.	TITLE
LDW280-17189-11 -11	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R (46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B3	SEE DWG
LDW280-17228 -11 THRU-18 -11 THRU-18	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53523 LDW280-54523	LDW280-23523 LDW280-23523	A3	
LDW280-17229 -11 THRU-18 -11 THRU-18	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53523 LDW280-54523	LDW280-23523 LDW280-23523	A3	
LDW280-17230 -11,-19,-21&-23 -11,-19,-21&-23	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53523 LDW280-54523	LDW280-23523 LDW280-23523	C5	
LDW280-17231-19 -19	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B7	
LDW280-17233 -30,-31,-33,-34,-35&-37 -30,-31,-33,-34,-35&-37 -29,-32,-33,-34-36&-38 -29,-32,-33,-34-36&-38	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46) LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520 LDW280-53521 LDW280-54521	LDW280-52520 LDW280-52520 LDW280-23521 LDW280-23521	D3	
LDW280-17234 -13,-14,-17,-19&-21 -13,-14,-17,-19&-21	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B3	
LDW280-17235-13&-14 -13&-14	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B3	
LDW280-17306-13 -13	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280 53521 LDW280-54521	LDW280-23521 LDW280-23521	B4	
LDW280-17310 -11,-13,-14,-15,-17&-19 -11,-13,-14,-15,-17&-19	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520	LDW280-52520 LDW280-52520	B3	
LDW280-17330 -32,-34,-36&-38 -32,-34,-36&-38 -31,-33,-35&-37 -31,-33,-35&-37	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46) LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520 LDW280-53521 LDW280-54521	LDW280-52520 LDW280-52520 LDW280-23521 LDW280-23521	D4	
LDW280-17348-13&15 -13&-15	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	C3	
LDW280-17431 -15,-17&-19 -15,-17&-19	LM-3(33) LM-4(34) THRU LM-15(15) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B5	
LDW280-17437 -11,-13&-15 -11,-13&-15 -14,-16&-18 -14,-16&-18	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46) LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520 LDW280-53521 LDW280-54521	LDW280-52520 LDW280-52520 LDW280-23521 LDW280-23521	A6	
LDW280-17438 -11,-13&-15 -11,-13&-15	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	A3	SEE DWG

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG		LCD-1533											5
REASON FOR EO: REINFORCE UPPER DECKS						DESCRIPTION OF EO: ON *, N/A WAS **											GAEC EO RELEASE: C
MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG ✓	RECORD EO	DISPOSITION OF PARTS: HOT REWORK	REQD SCRAP	APPROVED BY									
								DATE	6/9/67			6/15/67	6/16/67	6/12/67	6/16/67	6/16/67	
							5	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	CONT	EO NO.	
LM		LM-3(33) THRU LTA-3 D/R(46)	LM-15(45)	PRIORITY: C		DRAWING TITLE: NOTED						DRAWING NO.: LE0280					626

ISSUED BY G. ZEMAN/J. STRAKOSCH SECTION VDI GROUP NO. 335 PL 25

NAS 9-1100

ENG 22.1 REV 3-68

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LEO 280 | | EO NO. 1447
CONTROL INFO NO. LDW280B 7393

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17278 ✓	E4	SEE DWG
-17279 ✓	B3	
-17294 ✓	C1	
-17303 ✓	B3	
-17306 ✓	B5	
-17307	B6	
-17310	C1	
LDW280-17321	A3	SEE DWG

* APPLICABLE DASH NOS

(5)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCQ 3587 PKG 50 PG. 9 | CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM —*

GAEC EO RELEASE: VK 5/6/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: BASIC UNIT NO.	EFFECTIVITY: DWG CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP	APPROVED BY	DATE							
LM	—	LM-15(45)		✓			✓		4/16/69	VDI			RSF 4-24-69	WJH 4/18/69	5/9/69	5/16/69

PRIORITY: C | DRAWING TITLE: SEE DWG | ORDERING NO.: LEO 280 | EO NO.: 1447

052861 ISSUED BY MEVORAH / THORTJOSEN X26016 SECTION VEH DES INT GROUP NO. 335 PL 25

01 NAS 9-1100

THIS IS AN ORIGINAL EO

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1525

CONTROL INFO NO. LDW 280B 8078

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (-40) [redacted]
ADD LTA-11 ([redacted]23) REQUIREMENTS WITH THE SAME NEXT ASSEMBLY AND QUANTITY.

DRAWING NO *	TITLE	CHANGE NO
LDW280-17254	SEE DWG	C6
-17264		D4
-17278		E5
-17279		B4
-17294		C2
-17303		B4
-17306		B6
-17307		B7
-17321		A4
LDW280-17323	SEE DWG	B4

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG 99 Pg 243 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 ([redacted]23) REQMTS

GAEC EO RELEASE: JR 3-4-69; JR 8/8/69 Hansmann; 8/12/69 8-7-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11([redacted])	
		(23)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO

DISPOSITION OF PARTS: NOT REQ'D; REWORK; SCRAP

APPROVED BY								
DATE	7-29-69	VDI	SUPPORT	RELIAB GROUP	7/29/69 GROUP LEADER	8-7-69 STRESS GROUP	N LIAISON ENGRG	PROJ ENGRG

PRIORITY: C

DRAWING TITLE: SEE DRAWINGS

DRAWING NO.: LEO 280

EO NO. 1525

8-12-69 ISSUED BY G. HANSMANN X 87222 (ML) SECTION VDI GROUP NO 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280-17306 | EO NO. 87

CONTROL INFO NO. LDW280 B8704

FOR LDW280-17306-13

N/A LDW280-60521 WAS LDW280-54521
FOR LM-10(40) THRU LM-14(44) & LTA-11(23). ADD
LTA-3 D/R-1(460) EFFECTIVITY FOR N/A LDW280-
60521 (QTY REMAINS THE SAME AS THAT OF
LM-10(40)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | √ LCD3890 PKG. 51 Pg 2 (5)

REASON FOR EO
ADDITION OF EXTENDED D/S
PROP TANKS & TEST ARTICLE

DESCRIPTION OF EO
FOR -13
N/A LDW280-60521 WAS LDW280-54521
FOR LM-10(40) THRU LM-14(44) & LTA-11(23)
ADDED LTA-3 D/R-1(460) EFFECTIVITY

GAEC EO RELEASE
S&G 8-25-69
JK 8/27/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-10(40) THRU LM-14(44)		
LM	LTA-11(23)		
LM	LTA-3 D/R-1(460)		

DRAWING CHANGE REQD: REVISE DWG √; RECORD EO
DISPOSITION OF PARTS: NOT REQ'D; REWORK; SCRAP

APPROVED BY								
DATE	8-15-69			8/15/69	8/15/69	8/19/69	8/27/69	
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRS	PROJ. ENGRG	

PRIORITY: C

DRAWING TITLE: SHIM D/S - H2O TANK SUPPORT

DRAWING NO.: LDW280-17306

EO NO.: 87

9-10-69
ISSUED BY M.M. EANS / G. HARTMANN X87222 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-23525	LEM-6(36)	1
↕	↕	LEM-5(35)	1
↕	↕	LEM-4(34)	1
↕	LDW280-23525	LEM-3(33)	1
↕	LDW280-23525	LEM-2(32)	1
↕	LDW280-25525	LEM-1(31)	1
↕	LDW280-25525	LTA-8(18)	1
↕	LDW280-25525	LTA-5(15)	1
LEM	LDW280-23525	LTA-3(13)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

PART NO. LDW280-17307-11,13,15 & 17 — GAEC SCH NO. 51-4

(3)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1	1.10	2	3					
REV	A	A		A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED		GRUMMAN REL INFO A	
LAST DASH NO. USED	-17	PRIM NO. LE(001) 207	MP5A X

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS – DECIMALS – ANGLES
$\pm 1/32$ $\pm .020$ $\pm 1/2°$

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 — LINE ITEM # 1 — DOCUMENTATION TYPE II

DRAWN BY	E. HERCZEG / MAKULA 10-65	RELEASE	
LAYOUT BY	C DeAngelis 11/2/65		
CHECKED BY	[signature] 11-8-65		
GR LEADER	[signature] 11/11/65		
VEH DES INT	[signature] 11/13		
STRUCTURE	[signature]		
STRUCTURE	Hroberman 11/18	PROJ ENGR	[signature] 11/18
WEIGHTS	[signature] 11/18	RELEASE	Lippincott 11/20

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

TEE
DESCENT STAGE-L.H. END BLKHD.
H_2O TANK THRUSS SUPPORT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17307	A
SCALE NONE		SHEET 1 OF 4	

ENG 77.1 9-64

SWIP

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SUPERSEDING CHANGE LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.1.10 thru 3							EO A1	ON LDW 280-17307-11 thru -13 REVISED DIMS .063(REF) (WAS .062 $^{+.003}_{-.001}$) (4 PLCS.). ADDED SHEET 1.10, SH. 1 OF 4 WAS 1 OF 3. (R)	LTA-3,-5 thru -8 LEM-1,-2,-3, -4,-5 thru -6	NOT	REQ'D (R)	SVOBODA 3-9-66		

FOR CONTINUATION OF REVISIONS SEE SHEET

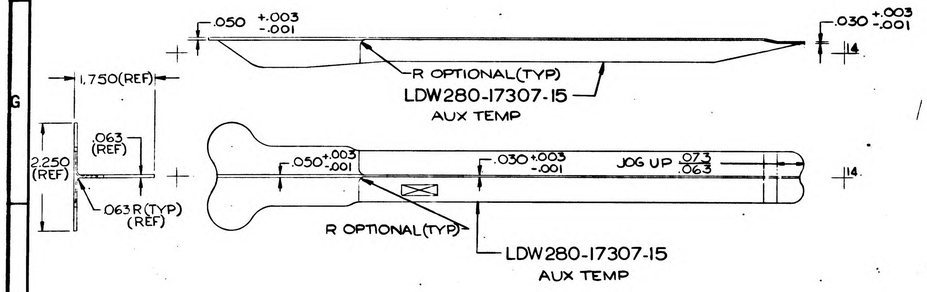
ENG 77.3 5-64

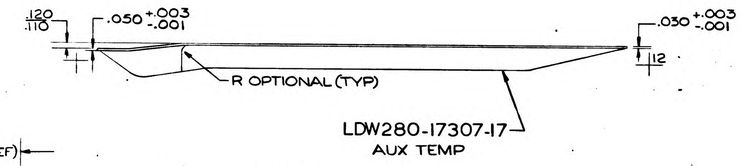
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

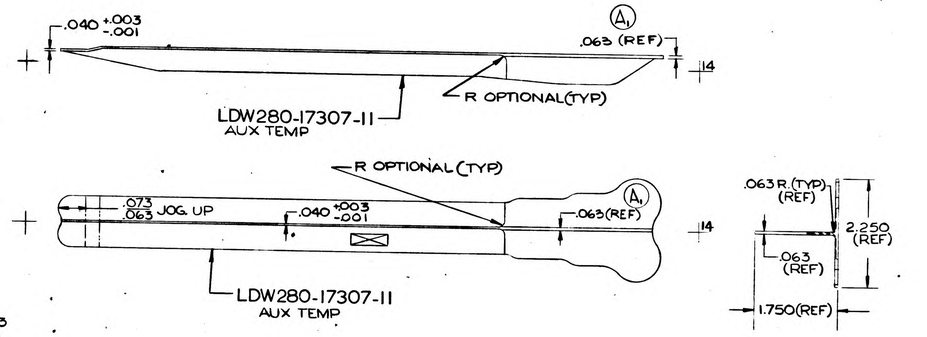
SIZE	CODE IDENT NO.		
B	26512	LDW280-17307	A
SCALE NONE			SHEET 1.10

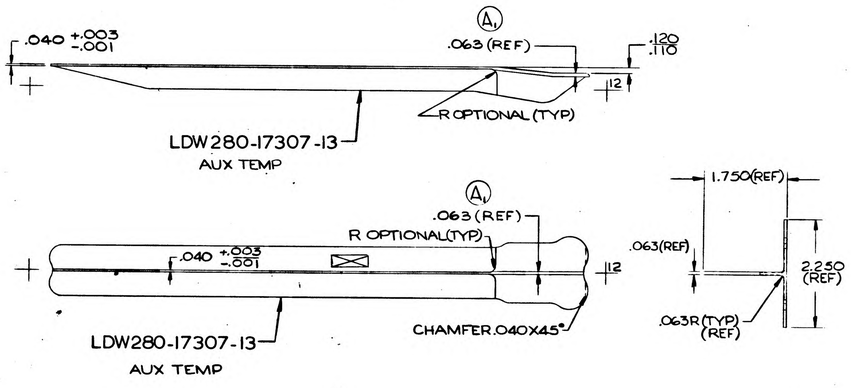
01

NAS 9-1100









35
30

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. OPTIONAL METHOD OF MFR IS MACHINING.

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

- RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED [redacted] USE SMALL BLACK RUBBER STAMP. ✓
- FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0013 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES
- 125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
- 200 √ FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS
- SYMBOL √ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED
- TOLERANCE ON LOFTED DELINEATIONS IS ✓

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK
SIZE E | CODE IDENT NO. 26512 | LDW280-17307 | A
MODEL OR END ITEM LEM | SCALE FULL | SHEET 3
FOR PHOTO REPRODUCTION

LDW280-17307 A

0-1

QTY PER ASSEMBLY	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	LDW280-17307-17	E		TEE	AL ALLOY EXTR	QQ-A-277	7075-T6511	DIE NO. 3348 1x11 3/8	CM	88	G6
	-15							DIE NO. 3348 1 x12 3/8			B6
	-13							DIE NO. 3348 1 x11 1/2			G3
	LDW280-17307-11	E		TEE	AL ALLOY EXTR	QQ-A-277	7075-T6511	DIE NO. 3348 1x12 3/8	CM	88	B2

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP14-9030
CM	CHEM MILL	LSP-14-2600

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17307

SCALE NONE SHEET 2

ENG 77.2 5-64

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENG 32.1 REV 3-65
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 123
CONTROL INFO NO. LDW 280-6854

FOR THE NOTED PART NOS., REVISE M/B AS FOLLOWS:
NOW: N/A LDW280-54525 EFF: LEM-4(34), LEM-5(35), LEM-6(36)
N/A LDW 280-23525 EFF: LTA-3(13), LEM-2(32), LEM-3(33)
WAS: N/A LDW280-23525 EFF: LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35), LEM-6(36)

PART NO.*	CHG NO.	DWG TITLE
✓LDW280-17125-19	B4	SEE DWG
✓LDW280-17154-11,-12	A2	
✓LDW280-17306-11,-21	B1	
LDW 280-17307-11,-15,-19-21	B3	
LDW280-17429-11,-13	A3	
LDW280M17113-3	D2	SEE DWG

2

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: WEIGHT CONTROL REQUIREMENTS

DESCRIPTION OF EO: REVISED M/B FOR PART NO.* WAS: N/A LDW280-23525 EFF: LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35), LEM-6(36)

GAEC EO RELEASE: M&PD 4/6/66

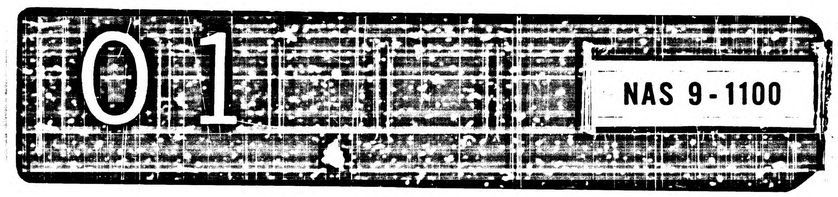
MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LEM		LEM-4(32)	
		~~LEM-5(35)~~	
		LEM-6(36)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT REQD	

APPROVED BY							
DATE	5/13/66	5/27					
	VDI	~~SUPERV. ENGR.~~	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
							VDI
						Plunkett	Scott
						Ihara	6-6-66

PRIORITY: C | DRAWING TITLE: NOTED | DRAWING NO.: LEO 280 | EO NO.: 123

ISSUED BY G. BECKER/J STRAKOSCH X1153 SECT' '4 DESIGN INT GROUP NO. 335 PL 35



GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-66

DWG. NO. LEO280 | EO NO. 541
CONTROL INFO NO. LDW280A6132

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17280		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG ✓ | LCD19-1242 | 2 C

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

(R) GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R	(46)

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REWORK | REQD SCRAP
APPROVED BY: [illegible] DATE 3/28/67
5 | YDI | SUPPORT | RELIAB GROUP | GROUP LEADER 3/28/67 | STRESS GROUP 4/4/67 | LIAISON ENGRG 3-30-67 | PROJ ENGRG 4/4/67

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 541

ISSUED BY G. BECKER/J. STARKSEN X1153 SECTION YDI GROUP NO. 335 PL. 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

DWG 22.1 REV 3-68

ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1447

CONTROL INFO NO. LDW280B7393

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17278 ✓	E4	SEE DWG
-17279 ✓	B3	
-17294 ✓	C1	
-17303 ✓	B3	
-17306 ✓	B5	
-17307 ✓	B6	
-17310	C1	
LDW280-17321	A3	SEE DWG

* APPLICABLE DASH NOS

(6)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. 9 | CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM *

SPEC EO RELEASE: JK 6/6/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: BASIC UNIT NO.	EFFECTIVITY: SUB CENTER UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP	APPROVED BY	DATE							
LM		LM-15(45)		✓			✓		6/8/69		VDA		PST 7-2-69	WM 7/8/69		5/C 7/9/69

PRIORITY: C | DRAWING TITLE: SEE DWG | DRAWING NO.: LEO 280 | EO NO.: 1447

052869 ISSUED BY: MEVORAH / THORTJOSEN X26046 SECTION: VEH DES INT GROUP NO. 335 M 25

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NAS 9-1100

THIS IS AN ORIGINAL EO

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

SHEET NO. LEO 280 | EO NO. 1525
CONTROL INFO NO. LDW 280 B 8078

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (4O) [redacted]
ADD LTA-11 ([redacted] 23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING NO *	TITLE	CHANGE NO
LDW 280-17254	SEE DWG	C6
-17264		D4
-17278		E5
-17279		B4
-17294		C2
-17303		B4
-17306		B6
-17307		B7
-17321		A4
LDW 280-17323	SEE DWG	B4

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG ✓ LCD 3890 PKG 99 PG 243

(5)

REASON FOR EO
NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO
ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: JR 8-4-69; JR 8/8/69; [illegible] Lauman 8-7-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11 [redacted] (23)	

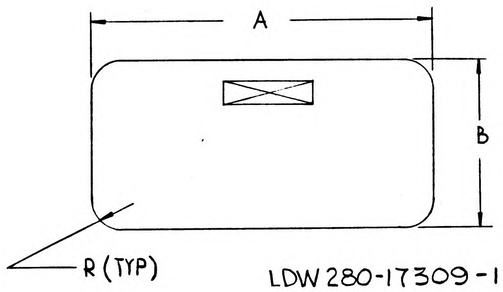
DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: NOT REQ'D; REWORK; SCRAP
APPROVED BY: DATE 7-28-69; VDI; SUPPORT; RELIAB GROUP; GROUP LEADER [illegible] 7/29/69; STRESS GROUP N 8-2-69; LIAISON ENGRG; PROJ ENGRG 10/10/69 8-7-69

PRIORITY C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO. LEO 280
EO NO. 1525

8-12-69 ISSUED BY G. HANSMANN X 87222 (ML) SECTION VDI GROUP NO 335 PL 25

01

NAS 9-1100



LDW 280-17309-11

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY	✓

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.

DASH NO'S	A	B	R	TH. (REF.)
-11	$3\frac{13}{16}$	$1\frac{29}{32}$	.312	.045

③

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
SIZE B	CODE IDENT NO. 26512	LDW280-17309	A
SCALE NONE		SHEET 3.00	

GMC 73.1 6-64

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-25521	LEM-1 (31)	1
LEM	LDW280-25521	LTA-8(18)	1
LEM	LDW280-25521	LTA-5(15)	1
LEM	LDW280-28520	LTA-8(18)	1
LEM	LDW280-25520	LTA-5(15)	1
LEM	LDW280-28520	LEM-1(31)	1
PART NO. LDW280-17309-11		GAEC SCH NO. 51-3	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1	1.10	2	3						
REV	B	B		A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	
LAST DASH NO. USED	-11

GRUMMAN REL INFO B

PRIM NO.	(E GOV)		
207	MPB	9-8-6	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS ± DECIMALS — ANGLES
±1/32 ±.020 ± 1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 | LINE ITEM NO 1 | DOCUMENTATION TYPE II

DRAWN BY	D. SANTOPIETRO	RELIABILITY		
LAYOUT BY	T. AMBROSIO			
CHECKED BY	AFS 10-20-65			
GR. LEADER	[illegible] 11/10/65			
VEH. DES. INST.	[illegible] 11/10/65			
STRUCTURES	[illegible] 10/25/65	PROJ ENGR	[illegible] 11/4	
STRUCTURES	[illegible] 11-4	REL GROUP	[illegible] 11-3-65	
WEIGHTS	[illegible] 11/1	RELEASE		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

PLATE
DESCENT STAGE - L.H & R.H
UPPER DECK-AFT INBD

SIZE	CODE IDENT NO.		
B	26512	LDW280-17309	B

SCALE NONE | SHEET 1 OF 4

ENG 77.1 9-64

SHIP

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	QUAL APPD
A	1	1,1.10,2&3							EO A1 (R)	IN FLD FOR -11, $3^{13}/_{16}$ WAS $4^{1}/_{8}$, $1^{29}/_{32}$ WAS $2^{1}/_{8}$. SH. 1 OF 4 WAS 1 OF 3 ADDED SH. 1.10	LTA-5 & -8 LEM-1	✓		L. Dixon 4-15-66		
B	1	1,1.10							EO B1	FOR -11 NEXT ASSY WAS LDW280-25531 EFF LTA-5,-8, & LEM-1, ADDED NEXT ASSY LDW280-28520 FOR LTA-8 & LEM-1.	LTA-8, LEM-1	NOT	REQD	P. CAPISELOS 8-16-66		
	2	1,1.10							(R)	REF EO B1, "NEXT ASSY WAS LDW280-25531", SHOULD BE, "NEXT ASSY WAS LDW280-25520" & LTA-5 DOES NOT APPLY.	NOT REQD	NOT	REQD	Rs		

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 5-64

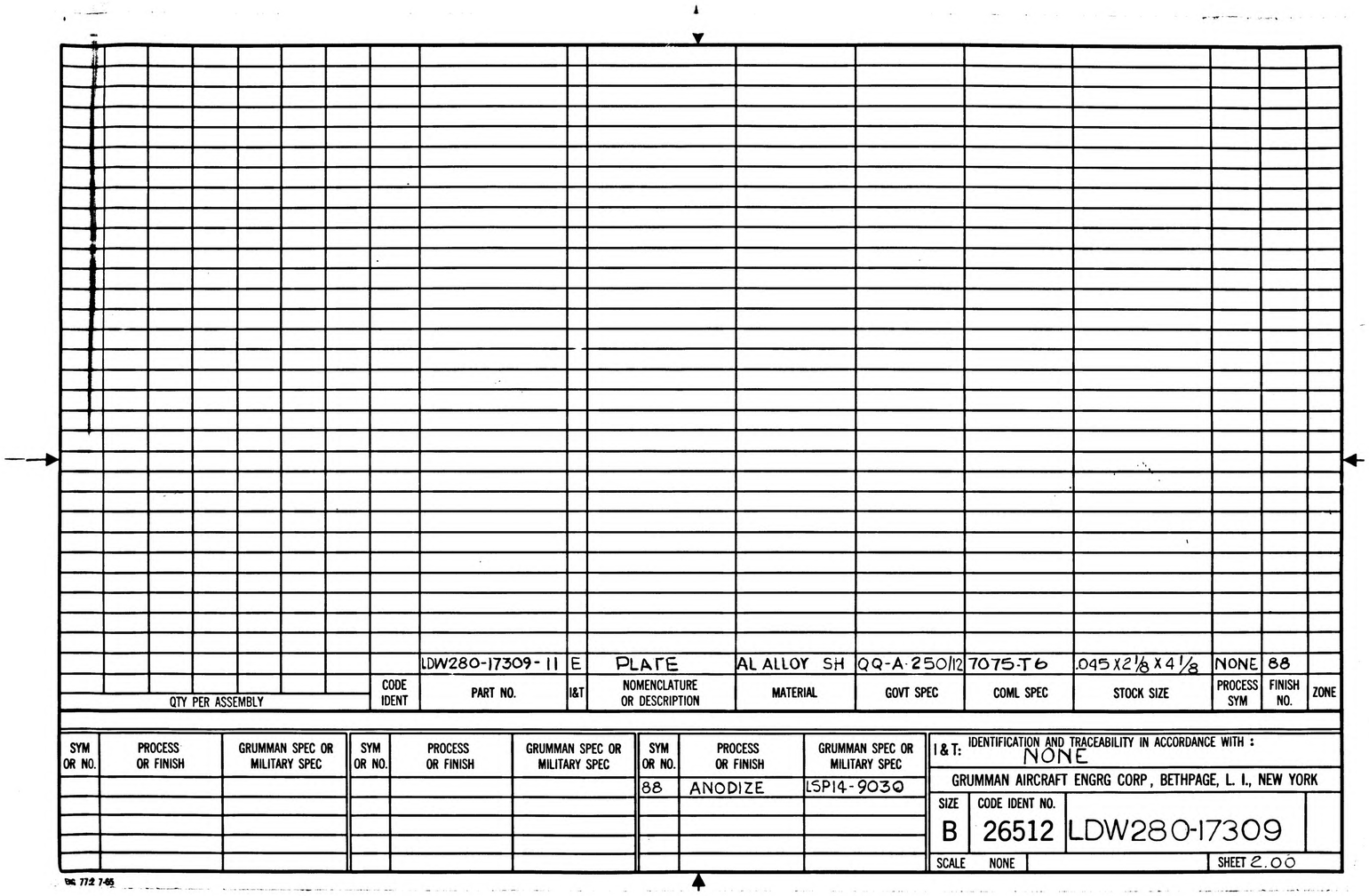
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17309	B

SCALE NONE | SHEET 1.10

01

NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17309-11	E	PLATE	AL ALLOY SH	QQ-A-250/12	7075-T6	.045 X 2 1/8 X 4 1/8	NONE	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17309

SCALE NONE SHEET 2.00

DG 772 7-65

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO.	LEO280	EO NO.	159
CONTROL INFO NO.	LDW280-7873		

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED*
RESTRICT N/A LDW 280-25520 TO LTA-5(15) ONLY
ADD N/A LDW280-28520 FOR LTA-8(18) & LEM-1(31)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17120-11	B5	WEB
-17224-21	B2	DOUBLER
-17233-30		ANGLE
-31		
-33		
-34		
-35		
-17233-37	C1	ANGLE
-17236-11		ZEE
-13		
-15		
-17236-17	A2	ZEE
-17288-11		STRAP
-17288-13	B1	STRAP
-17309-11	B1	PLATE
-17310-11		STIFFENER
-13		
-14		
-15		
-17		
-17310-19	A1	STIFFENER
-17330-34		ANGLE
-36		
-42		
-17330-32	C1	ANGLE
-17405-13		PLATE
-17405-17	B1	
-17406-13		
-17406-15	B1	PLATE
-17440-11		ANGLE
-13		
-17440-15	A1	
-17437-17		
-13		
-17437-15	A3	
-17444-11		
-17444-13	A2	ANGLE
-17614-11	B1	PLATE
LDW280-17617-11	B2	PLATE
LDW280M17259-1	A1	FITTING
LDW280-17749-13		CLIP
LDW280-17749-17	A4	CLIP

*USE APPLICABLE DASH NO IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: ADDITION OF AMBIENT He TANK

DESCRIPTION OF EO: FOR * N/A WAS LDW280-25531 EFF LTA-5,-8 & LEM-1
ADDED N/A LDW280 28520 FOR LTA-8 & LEM-1

GAEC EO RELEASE: LE 7424

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	
LEM		LEM-1(31)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK | SCRAP

APPROVED BY	DATE		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ E GRG
[illegible]	6-6-66		VDI			C130		Hawley 7-2-66

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 159

ISSUED BY J. Backofen / J. STRAKOSCH SECTION VEHICLE DESIGN GROUP NO. 335 PL 35

TO
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.2 REV 3-65

DWG. NO. LEO280 | EO NO. 159
CONTROL INFO NO. LDW280-7873

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED*
RESTRICT N/A LDW280-25520 TO LTA-5(15) ONLY
ADD N/A LDW280-28520 FOR LTA-8(18) & LEM-1(31)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17120-11	B3	WEB
-17224-21	B2	DOUBLER
-17233-30		ANGLE
-31		
-33		
-34		
-35		
-17233-37	C1	ANGLE
-17236-11		ZEE
-13		
-15		
-17236-17	A2	ZEE
-17288-11		STRAP
-17288-13	B1	STRAP
-17309-11	B1	PLATE
-17310-11		STIFFENER
-13		
-14		
-15		
-17		
-17310-19	A1	STIFFENER
-17330-34		ANGLE
-36		
-42		
-17330-32	C1	ANGLE
-17405-13		PLATE
-17405-17	B1	
-17406-13		
-17406-15	B1	PLATE
-17440-11		ANGLE
-13		
-17440-15	A1	
-17437-17		
-13		
-17437-15	A3	
-17444-11		
-17444-13	A2	ANGLE
-17614-11	B1	PLATE
LDW280-17617-11	B2	PLATE
LDW280M17259-1	A1	FITTING
LDW280-17749-13		CLIP
LDW280-17749-17	A4	CLIP

* USE APPLICABLE DASH NO IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: ADDITION OF AMBIENT He TANK

DESCRIPTION OF EO: FOR * N/A WAS LDW280-25531 EFF LTA-5,-8 & LEM-1 ADDED N/A LDW280 28520 FOR LTA-8 & LEM-1

GAEC EO RELEASE: IE 7-1-66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	
LEM		LEM-1(31)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK | SCRAP (for REQD)

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 159

APPROVED BY								
DATE						C130		7-2-66
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	DRAFT

ISSUED BY T. Backofen / J. STRAKOSCH SECTION VEHICLE DESIGN GROUP NO. 335 PL 35

NAS 9-1100

LFM 420-2370-003			
LDW420-2370	LDW280-54520	SER#1	2 EA
LM		LTA-3D/R	1 EA
		LM-15(45)	1 EA
		LM-14(44)	1 EA
		LM-13(43)	1 EA
		LM-12(42)	1 EA
		LM-11(41)	1 EA
		LM-10(40)	1 EA
		LM-9(39)	1 EA
		LM-8(38)	1 EA
		LM-7(37)	1 EA
		LM-6(36)	1 EA
		LM-5(35)	1 EA
	LDW280-54520	LM-4(34)	1 EA
	LDW280-53520	LM-3(33)	1 EA
	LDW280-23520	LM-2(32)	1 EA
	LDW280-23520	LTA-3(13)	1 EA
	LDW280-28520	LM-1(31)	1 EA
	LDW280-28520	LTA-8(18)	1 EA
LM	LDW 280-25520	LTA-5 (15)	1 EA

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.	GAEC SCH NO.		

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.	GAEC SCH NO.		

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17310-11,-13,-14,-15,-17 & -19	GAEC SCH NO. 51-3		

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00	1.10	2.00	3.00						
REV	B	B								
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	
LAST DASH NO. USED	-19

GRUMMAN REL INFO B

PRIM NO. UK(001)

207 ME-16B 4/3/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS — DECIMALS — ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 LINE ITEM NO. 1 DOCUMENTATION TYPE II

DRAWN BY	BARTOS 8-2-65	RELIABILITY	
LAYOUT BY	E MOUQUIN 12-20-65		
CHECKED BY	D. FASS 8-13-65		
GP LEALER	[signature] 1/5/66		
VEH DES. INT	[signature] 11/5/66		
STRUCTURES	[signature] 11/4/66		
STRUCTURES	[signature] 11/4/66	PROJ ENGR	[signature] 1/3
WEIGHT	[signature] 11/4/66	RELEASE	[signature] 1-15-66

GRUMMAN AIRCRAFT ENGRG CORP.
BETHPAGE, L. I., NEW YORK

STIFFENER
DESCENT STAGE-DECK
RH UPPER

SIZE	CODE IDENT NO.		
B	26512	LDW280-17310	B

SCALE NONE SHEET 1.00 OF 4

(3)

ENG 77.1 9-64

SMP

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NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1							LEO280-159	ADDED SH 1.10, SH 1 OF 4 WAS SH 1 OF 3. FOR -11, -13, -14, -15, -17 & -19, N/A WAS LDW280-25531 EFF LTA-5-8 & LEM-1 ADDED N/A LDW280-28520 FOR LTA-8 & LEM-1	LTA-8 LEM-1	NOT	REQD ww	P.MONACO 8-10-66		
B	1	1.00, 1.10							INC LEO 280-301	LM-7 THRU LM-15			N. OSTERHELD 3-25-69		
	2	1.00							INC LEO 280-541	LTA-3 D/R					
	3	1.00							INC LEO 280-626	LM-3 THRU LM-15 LTA-3 D/R					
	4	1.00							INC LEO 280-826	SER # 1					
	5	1.00							INC LEO 280-1217 BC						
	6	1.00 1.10					Y	LCD 1538	REF LEO 280-626 (B3) FOR -11, -13, -14 -15 -17 & -19 N/A WAS LDW 280-23520 D/F Jacobs (B-6 ONLY)	LM-4 THRU LM-15, LTA 3 D/R					

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
	A						
	B	Thorgrisen 3-27-69	Jacobs 3/27/69	WWS 4/8/69		JM 4/28/69	

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17310	B

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	LDW280-17310-19	E		STIFFENER	AL ALLOY SH	QQ-A-250/12	7075	.024 X 1 3/4 X 11 7/8	T6	88	
	-17							.020 X 1 3/4 X 11 7/8			
	-15							.045 X 1 3/4 X 11 7/8			
	-14							.050 X 1 3/4 X 11 7/8			
	-13							.050 X 1 3/4 X 11 7/8			
	LDW280-17310-11	E		STIFFENER	AL ALLOY SH.	QQ-A-250/12	7075	.056 X 1 7/8 X 11 7/8	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP 14-9030

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17310

SCALE NONE SHEET 2

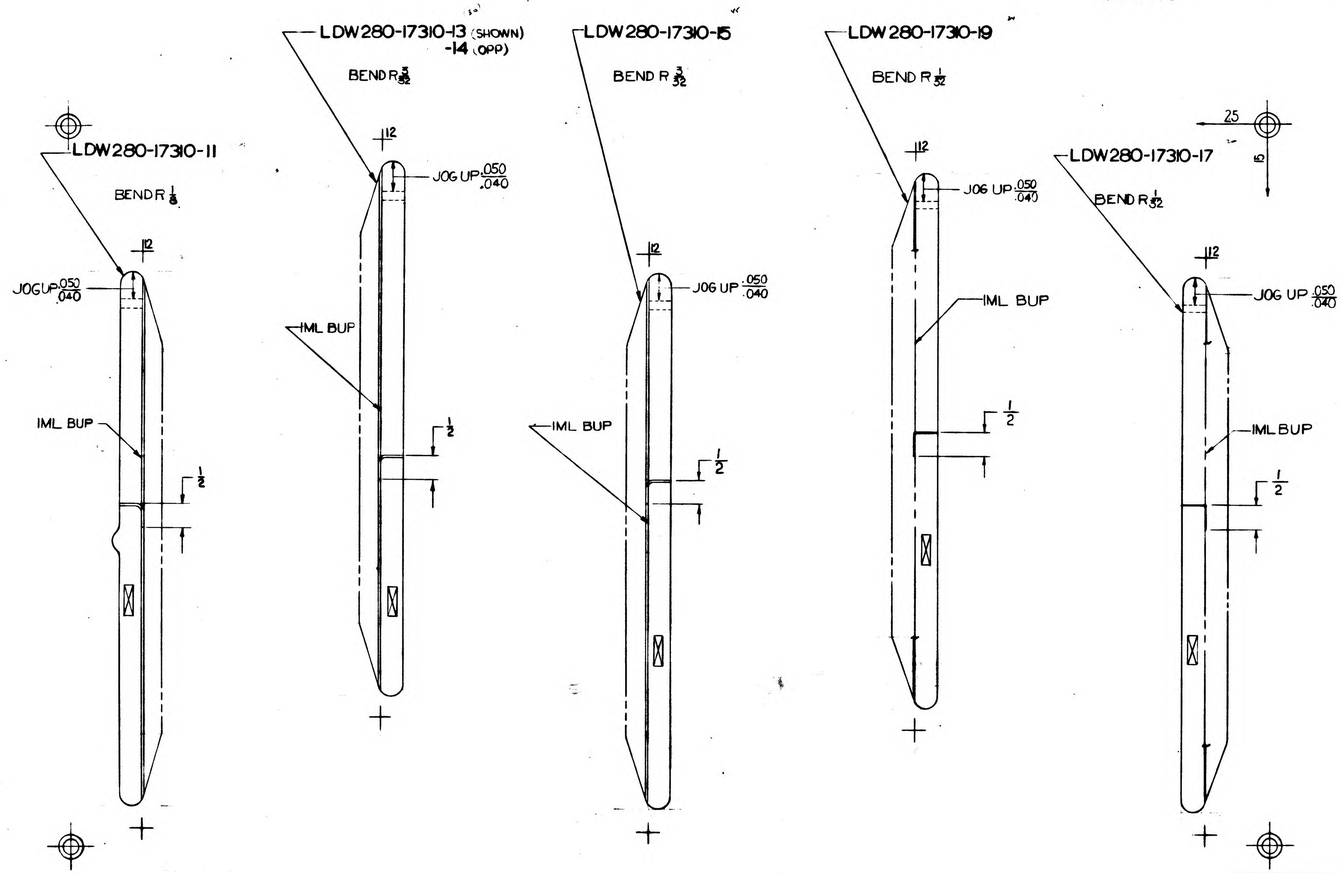
ENG 77.2 5-64

01

NAS 9-1100

LDW280-17310

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS



MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.

- RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY. ✓
- FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .008; .063R TO .250R ± .015; OVER .250R ± .030
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2.3 IMP. THDS. BEYOND PERMISSIBLE
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES
- 125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
- 200 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS
- SYMBOL √ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF AN, MS & NS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED
- TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32 ✓

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
D	26512	LDW280-17310

LEM | MODEL OR END ITEM | SCALE FULL | SHEET 3

2 FOR PHOTO REPRODUCTION

LDW280-17310

NAS 9-1100

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GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 2-65

DWG. NO. LEO280 | EO NO. 159
CONTROL INFO NO. LDW280-7873

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED*
RESTRICT N/A LDW280-25520 TO LTA-5(15) ONLY
ADD N/A LDW280-28520 FOR LTA-8(18) & LEM-1(31)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17120-11	B5	WEB
-17224-21	B2	DOUBLER
-17233-30		ANGLE
-31		
-33		
-34		
-35		
-17233-37	C1	ANGLE
-17236-11		ZEE
-13		
-15		
-17236-17	A2	ZEE
-17288-11		STRAP
-17288-13	B1	STRAP
-17309-11	B1	PLATE
-17310-11		STIFFENER
-13		
-14		
-15		
-17		
-17310-19	A1	STIFFENER
-17330-34		ANGLE
-36		
-42		
-17330-32	C1	ANGLE
-17405-13		PLATE
-17405-17	B1	
-17406-13		
-17406-15	B1	PLATE
-17440-11		ANGLE
-13		
-17440-15	A1	
-17437-17		
-13		
-17437-15	A3	
-17444-11		
-17444-13	A2	ANGLE
-17614-11	B1	PLATE
LDW280-17617-11	B2	PLATE
LDW280M17259-1	A1	FITTING
LDW280-17749-13		CLIP
LDW280-17749-17	A4	CLIP

*USE APPLICABLE DASH NO IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: ADDITION OF AMBIENT Hc TANK

DESCRIPTION OF EO: FOR * N/A WAS LDW280-25531 EFF LTA-5,-8 & LEM-1 ADDED N/A LDW280 28520 FOR LTA-8 & LEM-1

GAEC EO RELEASE: LE 7-2-66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	
LEM		LEM-1(31)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK | SCRAP (Not Reqd)
PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 159

APPROVED BY	DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
					CL30		Plunkett Bolt
	6-28-66						Mulvey 7-2-66
	VDI						

ISSUED BY J. Backofen / J. STRAKOSCH SECTION VEHICLE DESIGN GROUP NO. 335 PL 35

NAS 9-1100

ENG 32.2 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 159
CONTROL INFO NO. LDW280-7873

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED*
RESTRICT N/A LDW 280-25520 TO LTA-5(15) ONLY
ADD N/A LDW280-28520 FOR LTA-8(18) & LEM-1(31)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17120-11	B3	WEB
-17224-21	B2	DOUBLER
-17233-30		ANGLE
-31		
-33		
-34		
-35		
-17233-37	C1	ANGLE
-17236-11		ZEE
-13		
-15		
-17236-17	A2	ZEE
-17288-11		STRAP
-17288-13	B1	STRAP
-17309-11	B1	PLATE
-17310-11		STIFFENER
-13		
-14		
-15		
-17		
-17310-19	A1	STIFFENER ANGLE
-17330-34		
-36		
-42		
-17330-32	C1	ANGLE
-17405-13		PLATE
-17405-17	B1	
-17406-13		
-17406-15	B1	PLATE
-17440-11		ANGLE
-13		
-17440-15	A1	
-17437-17		
-13		
-17437-15	A3	
-17444-11		
-17444-13	A2	ANGLE
-17614-11	B1	PLATE
LDW280-17617-11	B2	PLATE
LDW280M17259-1	A1	FITTING
LDW280-17749-13		CLIP
LDW280-17749-17	A4	CLIP

*USE APPLICABLE DASH NO IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ		CL II ENGRG CHG	
CL I ENGRG CHG			

REASON FOR EO: ADDITION OF AMBIENT Hc TANK

DESCRIPTION OF EO: FOR * N/A WAS LDW280-25531 EFF LTA-5,-8 & LEM-1 ADDED N/A LDW280 28520 FOR LTA-8 & LEM-1

GAEC EO RELEASE: LE 7/26

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	
LEM		LEM-1(31)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK | SCRAP: Vor & Scrap

APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
[illegible]	6-30-66				C130		7-2-66
	VDI						

PRIORITY: C | DRAWING TITLE: NOTED | DRAWING NO.: LEO280 | EO NO.: 159

ISSUED BY J. Backofen / J. STRAKOSCH SECTION VEHICLE DESIGN GROUP NO. 335 PL 35

NAS 9-1100

ENG 22.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A 6132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A 6
17228		A 2
17229		A 2
17230		C 2
17231		B 6
17233		D 2
17234		B 2
17235		B 2
17238		A 4
17239		B 2
17240		B 2
17241		B 2
17242		B 2
17243		B 4
17251		B 2
17252		A 3
17253		B 2
17254		C 3
17264		D 2
17278		D 3
17279		B 2
17289		C 2
17290		B 2
17291		B 2
17292		J 2
17294		B 2
17295		B 2
17296		B 2
17306		B 3
17307		B 5
17310		B 2
17321		A 2
17330		D 3
17337		C 5
17341		D 2
17343		C 2
17344		B 2
17347		B 2
17348		C 2
17349		B 4
17352		A 3
17354		B 2
17356		B 2
17365		B 3
17366	SEE DWG	C 2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG ✓ | LCD19-1242 | 2

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R (46)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: NOT REWORK | REQD SCRAP

APPROVED BY: GAC 3/28/67 | DATE: 5 YDI | SUPPORT | RELIAB. GROUP | GAC 4/5/67 | GROUP LEADER | STRESS GROUP | LIAISON ENGR | PROJ. ENGR 3-30-67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 541

ISSUED BY: G. BECKER/J. STAKOSCH X1153 SECTION: YDI GROUP NO.: 335 PL: 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENG 32.2 REV 3-65
ENGINEERING ORDER

DWG. NO. LE0280 | EO NO. 626
CONTROL INFO NO. LDW280A7168

REVISE N/A FOR NOTED EFF AS SHOWN. QUANTITIES REMAIN THE SAME

DWG No *	EFF	N/A	WAS**	CH.LTR.	TITLE
LDW280-17189-11 -11	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B3	SEE DWG
LDW280-17228 -11 THRU-18 -11 THRU-18	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53523 LDW280-54523	LDW280-23523 LDW280-23523	A3	
LDW280-17229 -11 THRU-18 -11 THRU-18	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53523 LDW280-54523	LDW280-23523 LDW280-23523	A3	
LDW280-17230 -11,-19,-21&-23 -11,-19,-21&-23	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53523 LDW280-54523	LDW280-23523 LDW280-23523	C5	
LDW280-17231-19 -19	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B7	
LDW280-17233 -30,-31,-33,-34,-35&-37 -30,-31,-33,-34,-35&-37 -29,-32,-33,-34-36&-38 -29,-32,-33,-34-36&-38	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46) LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520 LDW280-53521 LDW280-54521	LDW280-52520 LDW280-52520 LDW280-23521 LDW280-23521	D3	
LDW280-17234 -13,-14,-17,-19&-21 -13,-14,-17,-19&-21	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B3	
LDW280-17235-13&-14 -13&-14	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B3	
LDW280-17306-13 -13	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280 53521 LDW280-54521	LDW280-23521 LDW280-23521	B4	
LDW280-17310 -11,-13,-14,-15,-17&-19 -11,-13,-14,-15,-17&-19	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520	LDW280-52520 LDW280-52520	B3	
LDW280-17330 -32,-34,-36&-38 -32,-34,-36&-38 -31,-33,-35&-37 -31,-33,-35&-37	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46) LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520 LDW280-53521 LDW280-54521	LDW280-52520 LDW280-52520 LDW280-23521 LDW280-23521	D4	
LDW280-17348-13&15 -13&15	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	C3	
LDW280-17431 -15,-17&-19 -15,-17&-19	LM-3(33) LM-4(34) THRU LM-15(15) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B5	
LDW280-17437 -11,-13&-15 -11,-13&-15 -14,-16&-18 -14,-16&-18	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46) LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520 LDW280-53521 LDW280-54521	LDW280-52520 LDW280-52520 LDW280-23521 LDW280-23521	A6	
LDW280-17438 -11,-13&-15 -11,-13&-15	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	A3	SEE DWG

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	LCD-1533
		✓	

REASON FOR EO: REINFORCE UPPER DECKS

DESCRIPTION OF EO: ON * N/A WAS **.

GAEC EO RELEASE: VK 4/6/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: HOT REWORK	REQD SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	SGWT
LM		LM-3(33) THRU LTA-3 D/R(46)	LM-15(45)	✓			5	VDI	4/9/67			4/11/67	4/11/67	4/11/67	4/11/67	

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LE0280
EO NO.: 626

ISSUED BY G. ZEMAN/J. STRAHOSCH SECTION VDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO 280 | EO NO. 826
CONTROL INFO NO. LDW280B0881

FOR THE FOLLOWING DWGS, ADD LFM420-2370-003, LDW420-2370 SER#1 EFF ; AND ADD N/A LDW420-2386

DWG NO. *	DASH NOS.	NO. REQD	NEXT ASSY	CHANGE NO.	TITLE
LDW280-54520	-11	1	LDW420-2386	A7	SEE DWG
LDW280-54521	-13	1	LDW420-2386	A10	
LDW280-54522	-15	1	LDW420-2386	B2	
LDW280-54523	-11	1	LDW420-2386	A6	
LDW280-51560	-9	1	LDW420-2386	C3	

FOR THE FOLLOWING DWGS, ADD LFM420-2370-003, LDW420-2370 SER#1 EFF. QTY AND NEXT ASSY REMAIN THE SAME.

DWG NO. *	DASH NOS.	CHANGE NO.	TITLE
LDW280-17120	-25	D3	SEE DWG
-17121	-37	D6	
-17122	-29-33	E10	
-17123	-23	C9	
-17228	-11-12-13-14-15-16-17-18	A6	
-17229	-11-12-13-14-15-16-17-18	A6	
-17230	-11-19-21-23	C9	
-17233	-29-30-31-32-33-34-35-36-37-38	D4	
-17234	-13-14-17-19-21-23	B4	
-17310	-11-13-14-15-17-19	B4	
-17330	-31-32-33-34-35-36-37-38	D5	
-17431	-15-17-19	B6	
-17437	-13-14-15-16-17-18	A7	
-17438	-11-13-15	A4	
-17440	-11-13-15	B4	
-17604	-15-17	A5	
-17605	-15-17	A5	
-17606	-23-25	B6	
-17841	-13-19-21-23	A10	
-17842	-11-12-13-14	B5	
-17843	-13-15	A6	
-17845	-11-13-15	A4	
-17846	-11-12-13-14-15-16-17-18-19	A4	
-17850	-17-19-21	B6	
-17981	-11-15	B4	
-18111	-15	B6	
-18301	-33	A6	
LDW280P17497	-9	A5	

NAS 9-1100

FITH LFM

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LCD 1244	80 (5) C

REASON FOR EO: F.I.T.H. TEST

DESCRIPTION OF EO: ON *, ADDED LFM420-2370-003, LDW420-2370 EFF. ON LDW280-54520-11, LDW280-54521-13, LDW280-54522-15, LDW280-54523-11, LDW280-51560-9 ADDED NEXT ASSY LDW420-2386

GAEC EO RELEASE: JC 1/4/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM420	-2370-003	
LM	LDW420	-2370	SER#1

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO | DISPOSITION OF PARTS: NOT REQD REWORK | SCRAP

APPROVED BY: DATE 1/9/67 | VDI | SUPPORT | RELIAB GROUP | GROUP LEADER 12/21/67 | STRESS GROUP 1/2/68 | LIAISON ENGRG | PROJ ENGRG 1-4-68

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 826

01-15-67 ISSUED BY ROESSLER / THORJUSEN X1153 SECTION VDI GROUP NO. 335 PL 25

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO.	LEO 280	EO NO.	1217
CONTROL INFO NO.	LDW280B6103		

FOR THE FOLLOWING DRAWINGS & DASH Nos, REVISE QUANTITY REQ'D AS FOLLOWS FOR SER #1 EFF.; N/A TO REMAIN THE SAME:

DRAWING NO.	DASH NO. *	QUANTITY ● (WAS)	QUANTITY △ (IS)	CHG. LTR.	TITLE
LDW280-17121	-37	1	2	D7	SEE DWG.
LDW280-17234	-23	1	2	B5	
	-21	1	2		
	-19	1	2		
	-17	1	2		
	-15	1	2		
	-13	1	2		
LDW280-17233	-29	1	2	D5	
	-30	1	2		
	-31	1	2		
	-32	1	2		
	-33	2	4		
	-34	2	4		
	-35	1	2		
	-36	1	2		
	-37	1	2		
	-38	1	2		
LDW280-17850	-17	2	4	B7	
LDW280-17438	-11	1	2	A5	
	-13	1	2		
	-15	1	2		
LDW280-17437	-13	1	2	A8	
	-14	1	2		
	-15	1	2		
	-16	1	2		
	-17	1	2		
	-18	1	2		
LDW280-17431	-15	1	2	B7	
	-17	1	2		
	-19	1	2		
LDW280-17330	-31	1	2	D6	
	-32	1	2		
	-33	1	2		
	-34	1	2		
	-35	1	2		
	-36	1	2		
	-37	1	2		
	-38	1	2		
LDW280-17440	-11	1	2	B5	
	-13	1	2		
	-15	1	2		
LDW280-17310	-11	1	2	B5	
	-13	1	2		
	-14	1	2		
	-15	1	2		
	-17	1	2		
	-19	1	2		
LDW280-17120	-25	1	2	D4	
LDW280-17981	-11	1	2	B7	
	-15	1	2		
LDW280-17841	-13	1	2	B1	
	-19	1	2		
	-21	1	2		
	-23	1	2		

LFM

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LCD 3504 PAG. # 1

REASON FOR EO: ADDT'L DECK HARDWARE REQ'D FOR FITH TESTING

DESCRIPTION OF EO: FOR *, CHANGED QUANTITY FROM ● TO △

(5) GAEC EO RELEASE VC 11/14/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LDW	420-2370		
LFM	420-2370	007	SERIAL #1

DRAWING CHANGE REQ'D: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: NOT REWORK	REQ'D SCRAP
✓			

APPROVED BY							
DATE	11/7/68	11/6/68	11/6/68	11/7/68	11/6/68	11/8/68	11-13-68
	VDI	SUPPORT	PROD. PLANNING & RELEASE GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO 280

EO NO.: 1217

CDR 11/5/68 ISSUED BY JOE LUCCHESI / G. ZEMAN ×86096 SECTION V.D.I. GROUP NO. 335 PL 25

TO
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

DWG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1447

CONTROL INFO NO. LDW280B7393

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17278 ✓	E4	SEE DWG
-17279 ✓	B3	
-17294 ✓	C1	
-17303 ✓	B3	
-17306 ✓	B5	
-17307 ✓	B6	
-17310 ✓	C1	
LDW280-17321	A3	SEE DWG

* APPLICABLE DASH NOS

(6)

DETAIL SPEC REQ ☐ | CL II ENGRG CHG ☐ | CL I ENGRG CHG ☑ LCQ 3587 PKG 50 PG. 9 CCA 1821

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
LM-15(45) NO LONGER REQD	DELETED LM-15(45) EFF FROM — *	5/16/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE PAGE	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP	APPROVED BY	DATE	VDA	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP LEADER	LIAISON ENGR	PROJ ENGR	EP NO.
LM		LM-15(45)					✓		4/16/69	VDA			4-26-69	4/16/69		5/16/69	

PRIORITY: C | DRAWING TITLE: SEE DWG | DRAWING NO.: LEO 280 | EP NO.: 1447

ISSUED BY: 052867 MEVORAH / THORTJOSEN X86046 SECTION: VEH DES INT GROUP NO. 335 PL 25

01

NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO-280 | EO NO. 1667
CONTROL INFO NO. LDW280B7663

REMOVE LM-10(40) THRU LM-14(44) EFFECTIVITY FROM ALL DASH NOS.* FOR THE NOTED N/A*-*:

DWG. NO.*	N/A*-*	DWG. TITLE	CHG. NO.
LDW280-17120	LDW280-54520	SEE DWG.	D6
-17121	-54521		E3
-17122	-54522		F2
-17233	-54520		D7
	-54521		
-17234	-54521		C2
-17235	-54521		B5
-17310	-54520		C2
-17330	-54520		E2
	-54521		
-17431	-54521		C2
LDW280-17437	-54520	SEE DWG.	B1
	LDW280-54521		

NAS 9-1100

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LCD 3890 PKGS 50 #51 #52

REASON FOR EO: REDESIGN OF UPPER DECKS FOR EXTENDED PROP. TANKS

DESCRIPTION OF EO: FOR (*) REMOVED LM-10(40) THRU LM-14(44) EFF. FOR N/A *-*

GAEC EO RELEASE: 5 | 9-16-69 | 9/12/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10(40) THRU LM-14(44)	

DRAWING CHANGE REGD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
			✓

APPROVED BY / DATE: VDI 9/16/69 | SUPPORT | RELIAB. GROUP | GROUP LEADER 9/16/69 | STRESS GROUP 9/16/69 | LIAISON ENGRG | PROJ ENGRG 9/16/69

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO 280

EO NO.: 1667

9-10-69 ISSUED BY L. KRAVITZ/THORJUSEN x87222 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

								LEM	LDW 280-23536	LEM-6(30)	1 EA
									LDW 280-23536	LEM-5(35)	1 EA
									LDW 280-23536	LEM-4(34)	1 EA
									LDW 280-23536	LEM-3(33)	1 EA
									LDW 280-23536	LEM-2(32)	1 EA
								LE M	LDW 280-23536	LTA-3(13)	1 EA
				LEM	LDW 280 25536	LEM-1(31)	1 EA				
				LEM	LDW280-25536	LTA-8(18)	1 EA				
				LEM	LDW280-25536	LTA-5(15)	1 EA				
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.		PART NO. LDW 280-17321-11 E -13		GAEC SCH NO. 51-4		PART NO. LDW280-17321-15½-17		GAEC SCH NO. 51-4	

(3)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1		2	3						
REV										
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED		GRUMMAN REL INFO		
LAST DASH NO. USED	-17	PRIM NO.	(E)001	
		207	PP12	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100 | LINE ITEM # 1 | DOCUMENTATION TYPE II

DRAWN BY	HERB. SCHWETER 11/3/65	RELIABILITY	
LAYOUT BY	A. MATTEI 11/3/65		
CHECKED BY	WG WCG 12/10/65		
GR LEADER	[illegible] 11/16/65		
VEH DES INT	[illegible] 11/17/64		
STRUCTURES	[illegible] Feb 12/29	PROJ ENGR	[illegible] 1/4
STRUCTURES	Hildesman 12/29	REL GROUP	Spinacott 1/10/66
WEIGHTS	V. B. Mandigo 1/3/66		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CHANNEL
DESCENT STAGE-AFT RH PANEL
DECA. SUPPORT

SIZE	CODE IDENT NO.	
B	26512	LDW280-17321

SCALE NONE | SHEET 1 OF 3

ENG 77.1 9-64

SWIP

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17321-17	E	CHANNEL	AL ALY 5H	QQ-A-283	7075	.045x 6 3/8x15 3/8	CM, T6	88	
		LDW280-17321-15	E	CHANNEL	AL ALY 5H	QQ-A-283	7075	.045x 6 3/8x15 3/8	CM, T6	88	
		LDW280-17321-13	E	CHANNEL	AL ALY 5H	QQ-A-283	7075	.045x6 3/8x15	CM, T6	88	
		LDW280-17321-11	E	CHANNEL	AL ALY 5H	QQ-A-283	7075	.045x6 3/8x15	CM, T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
CM	CHEM-MILL	LSP14-26100
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17321

SCALE NONE SHEET 2

ENG 77.2 7-65

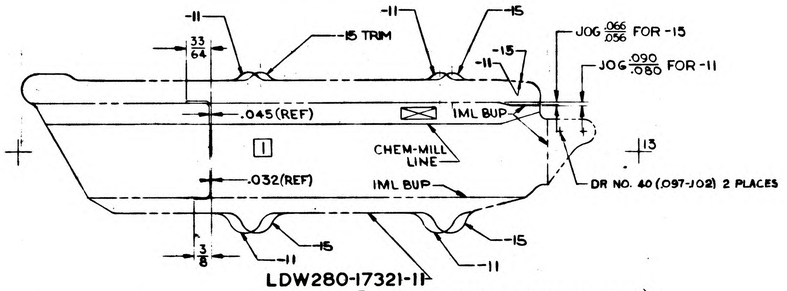
01

NAS 9-1100

LDW280-17321

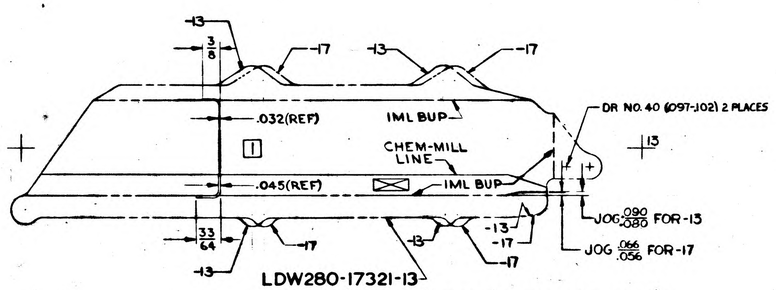
LDW280-17321 -11,-13,-15 & -17

CHEM-MILL LINE TOLERANCE: ± 1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ± 1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040		
SYMBOL	THICKNESS AFTER CHEM-MILLING	DEPTH OF CUT
1	.032 +.003 −.002	.013(REF)



LDW280-17321-11

BEND R 3/32 -15 (IDENTICAL EXCEPT AS NOTED)



LDW280-17321-13

BEND R 3/32 -17 (IDENTICAL EXCEPT AS NOTED)

25
20

NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. ALL ABBREVIATIONS ARE PER MIL-STD-12 EXCEPT AS FOLLOWS D.E.C.A (DESCENT ENGINE CONTROL ASSEMBLY).

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠	√
FILLET AND INSIDE CORNER RADII TOLERANCES .010R TO .062R ± .008 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED ⊠ MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS MILLIONS REAMED HOLES PER MIL-STD-10	
250 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	√

LDW280-17321

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
	SIZE	CODE IDENT NO.	LDW280-17321
LEM	D	26512	
MODEL OR END ITEM	SCALE FULL		SHEET 3

FOR PHOTO REPRODUCTION

K2

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A 5132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG [✓] | LCD19-1242 | (B) 4 | GAEC EO RELEASE 2 C

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R (46)	

DRAWING CHANGE REQD: REVISE DWG [1] RECORD EO

DISPOSITION OF PARTS: NOT REWORK; BLDD SCRAP

APPROVED BY: GAC | DATE: 3/28/67 | 5 | YDT | SUPPORT | RELIAB GROUP | GROUP LEADER 3/29/67 | STRESS GROUP 4/4/67 | LIAISON ENGRG | PROJ ENGRG 3-30-67 4/4/67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 541

ISSUED BY G. BECHER/J. STAKOSCH X1153 SECTION YDT GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 22.1 REV 3-68

ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1447

CONTROL INFO NO. LDW280B 7393

FOR THE DWGS LISTED BELOW DELETE LM-15 (45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17278 ✓	E4	SEE DWG
-17279 ✓	B3	
-17294 ✓	C1	
-17303 ✓	B3	
-17306 ✓	B5	
-17307 ✓	B6	
-17310 ✓	C1	
LDW280-17321 ✓	A3	SEE DWG

* APPLICABLE DASH NOS (6)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG ✓ LCD 3587 PKG 50 PG. 9 CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD

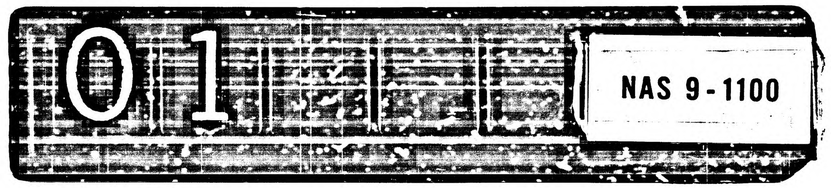
DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM —*

GAEC ED RELEASE 5/9/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY REQ.	GAEC UNIT NO.	SSD CONTR UNIT NO.	DRAWING CHANGE REQD: WITH PUR	WITH ED	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY	DATE	VDI	SUPPORT	RELIAB	GROUP LEADER	STR & DYN	LIAISON	PROJ ENGR	PD
LM		LM-15(45)					✓ SCRAP		4/28/69				4/29/69	4/30/69		5/14/69	

PRIORITY: E | DRAWING TITLE: SEE DWG | DRAWING NO.: LEO 280 | EO NO.: 1447

05286 ISSUED BY: MEYORAH / THORTJOSEN X26046 SECTION: VEH DES INT GROUP NO. 335 PG. 25



THIS IS AN ORIGINAL EO

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1525
CONTROL INFO NO. LDW 280B 8078

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40) [redacted)
ADD LTA-11 (23 [redacted]) REQUIREMENTS WITH THE SAME NEXT ASSEMBLY AND QUANTITY.

DRAWING NO *	TITLE	CHANGE NO
LDW 280-17254	SEE DWG	C6
-17264		D4
-17278		E5
-17279		B4
-17294		C2
-17303		B4
-17306		B6
-17307		B7
-17321		A4
LDW 280-17323	SEE DWG	B4

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG ✓ LCD 3890 PKG 99 PG 243 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: AR 8-4-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG ✓	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
LM		LTA-11 ([redacted]) (23)		✓		NOT REQ'D		DGY	7-28-69			M 8-2-69			8-7-69
								VDI							

PRIORITY: C | DRAWING TITLE: SEE DRAWINGS | DRAWING NO.: LEO 280 | EO NO. 1525

8-12-69 ISSUED BY G. HANSMANN X 87222 (ML) SECTION VDI GROUP NO 335 PL 25

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-23630	LEM-6(36)	1
		LEM-5(35)	1
		LEM-4(34)	1
		LEM-3(33)	1
		LEM-2(32)	1
		LEM-1(31)	1
		LTA-8(18)	1
		LTA-5(15)	1
LEM	LDW280-23630	LTA-3(13)	1
PART NO. LDW280-17323-13		GAEC SCH NO. 51-5	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1	1.10	2	3						
REV	A	A	A	A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED		GRUMMAN REL INFO
LAST DASH NO. USED	-13	PRIM NO. JR(001)
		207 PP10

ENG 77.1 9-64

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100 | LINE ITEM # 1 | DOCUMENTATION TYPE II

DRAWN BY	A. SCHMADTKE 11/16/65	RELIABILITY	
LAYOUT BY	A. MATTIE 11-17-65	PROPULSION	—
CHECKED BY	J.S. 11-17-65		
GR LEADER	11/16/65		
VEH DES INT	11/18		
STRUCTURES	11/19	PROJ ENGR	11/23
STRUCTURES	11/17	REL GROUP	11/23
WEIGHTS	11/22		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BRACKET
DESCENT STAGE-QUAD III UPPER DIAG-
FUEL VENT COUPLING SPT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17323	A

SCALE FULL NONE | SHEET 1 OF 4

SWP

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10, 3.00						E.O. A1	SH. 1 OF 4 WAS 1 OF 3 ADDED SH. 1.10. ADDED -13, REMOVED -11	LEM-1 THRU LEM-6, LTA-3, LTA-5, LTA-8		-11 S.J.	J. BRODA 7-13-66	X	X

CHG APPROVED

LTR	GROUP LDR	VEH. DES. INT	STRUCTURES	STRUCTURES	WEIGHTS
A					

ENG 77.16 3-66

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17323	A

SCALE NONE SHEET 1.10

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17323-13	E	BRACKET	AL ALLOY SH	QQ-A-250/12	7075	.032 X 4 1/4 X 5 1/2	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE.	LSP14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17323	A
SCALE NONE		SHEET 2	

ENG 77.2 7-65

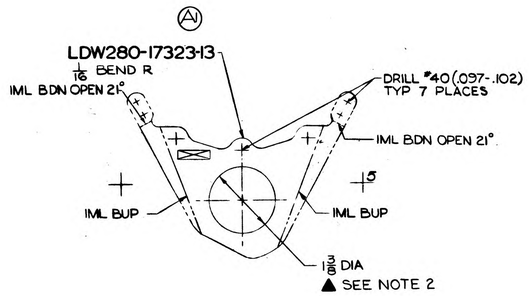
01

NAS 9-1100

TRAM 0.2

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY	✓
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. HOLE MARKED ▲ FORMS PART OF AN INTERCHANGEABLE INTERFACE AS SHOWN ON LDW280-23630.



GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK			
SIZE	CODE IDENT NO.	LDW280-17323	A
C	26512		
LEM MODEL OR END ITEM	SCALE FULL	SHEET 3	

FOR PHOTO REPRODUCTION

LDW280-17323 A

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG NO. LDW280-17323 | EO NO. B2

CONTROL INFO NO. LM-S-21219

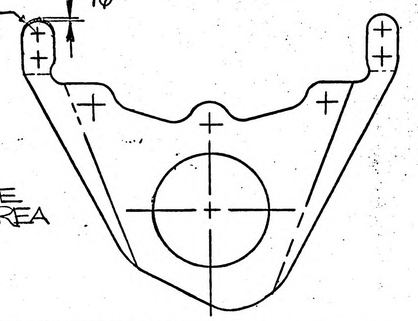
IN F/D TRIM -13

TRIM SHADED AREA AS SHOWN

R

1/16

REWORK NOTE:
BRUSH ALODINE REWORKED AREA



DETAIL SPEC REQ	CL II ENGRG CHG	X	CL I ENGRG CHG

REASON FOR EO: LM-S-108 TO PROVIDE CLEARANCE WITH ADJOINING STRUCTURE

DESCRIPTION OF EO: TRIMMED -13

GAEC EO RELEASE: JK

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-5(35) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY: VDI | SUPPORT | RELIAB. GROUP

DATE: 12/3/67 | 12-13-68 | 12-13-68 | 12-11-68

GROUP LEADER: RPT | STRESS GROUP: RH | LIAISON ENGRG: [illegible] | PROJ ENGRG: [illegible]

PRIORITY: C

DRAWING TITLE: BRKT D/S-QUAD III UP DWG FWD

DRAWING NO.: LDW280-17323

EO NO.: B2

LIAISON J.H. J.B! ASE XEG735

SECTION VDI

GROUP NO. 335 PL 25

083

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 1374
CONTROL INFO NO. LDW280B7394

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17323 ✓	B3	SEE DWG
-17327	B4	
-17330	E1	
-17337	D1	
-17341	E1	
-17343	C3	
-17344	B3	
-17347	B3	
-17348	C4	
LDW280-17349	C1	SEE DWG

* APPLICABLE DASH NOS

DETAIL SPEC REQ | CL II ENGRG CNG | CL I ENGRG CNG | ✓ LCD 3587 PKG 50 PG. 8 CCA 1821 (5)

REASON FOR EO: LM-15(45) NO LONGER REQD.

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM -*

GAEC EO RELEASE: VK 4/24/69

EFFECTIVITY

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK | SCRAP ✓

APPROVED BY: VDI | DATE: 4-24-69 | SUPPORT | RELIAB. | GROUP ENGR. PBT | STRESS GROUP W/M | LIAISON | PROJ. | SPEC.

PRIORITY: C | DRAWING TITLE: SEE DWG | DRAWING NO.: LEO 280 | EO NO. 1374

APS 2869 ISSUED BY MEVORAH / THORTJUSEN X86096 SECTION VEH DES INT GROUP NO. 335-25

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NAS 9-1100

THIS IS AN ORIGINAL EO

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.1 REV 3-66

DWG. NO. LEO 280 | EO NO. 1525

CONTROL INFO NO. LDW 280 B 8078

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40) [redacted]
ADD LTA-11 ([redacted]23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING NO *	TITLE	CHANGE NO
LDW 280-17254	SEE DWG	C6
-17264		D4
-17278		E5
-17279		B4
-17294		C2
-17303		B4
-17306		B6
-17307		B7
-17321		A4
LDW 280-17323	SEE DWG	B4

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG ✓ | LCD 3890 PKG 99 Pg 243 (5)

REASON FOR EO
NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO
ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: JR 3-4-69; 8/8/69 Sauman; 8-7-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11 ([redacted]	
		(23)	

DRAWING CHANGE REQD: ✓ REVISE DWG; RECORD EO

DISPOSITION OF PARTS: NOT REQ'D; REWORK; SCRAP

APPROVED BY									
DATE	7-23-69			8/29/69	8-7-69		9/4/69	8-7-69	
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STR. IS GROUP	LIAISON ENGRG	PROJ ENGRG		

PRIORITY: C

DRAWING TITLE: SEE DRAWINGS

DRAWING NO.: LEO 280

EO NO. 1525

8-12-69
ISSUED BY G. HANSMANN X 87222 (ML) SECTION VDI GROUP NO 335 PL 25

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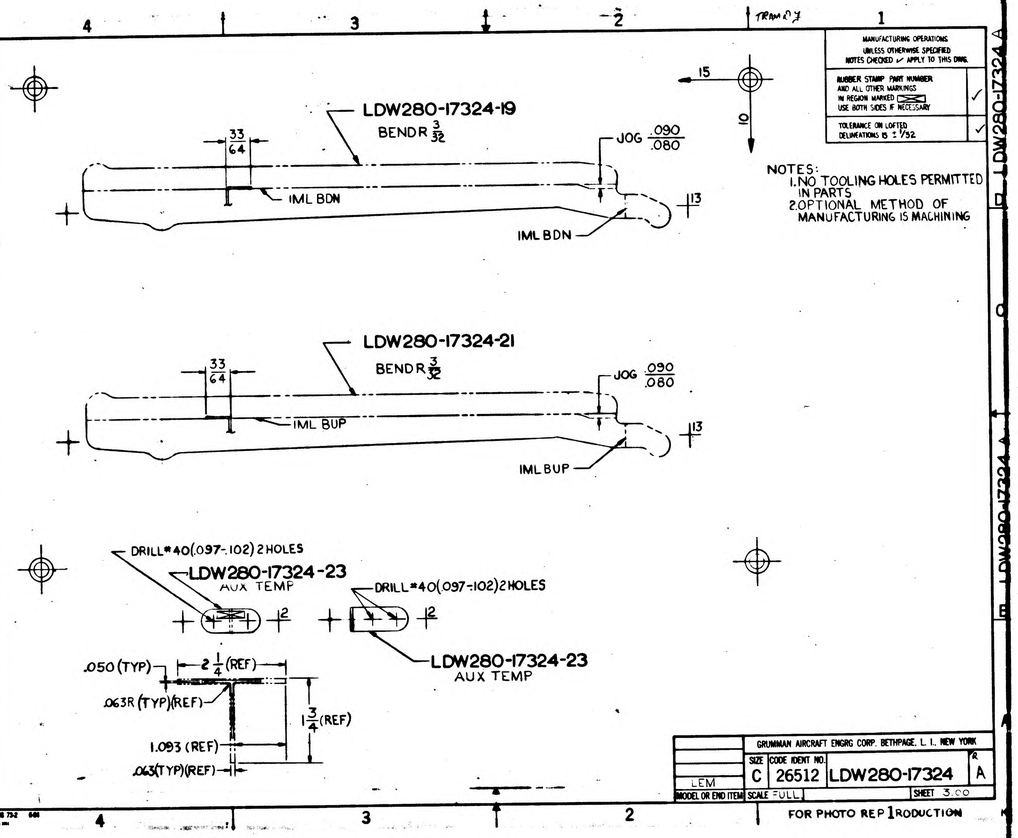
NAS 9-1100


LDW280-17324-19
BENDR 3/32
33/64
JOG .090/.080
IML BDN
IML BDN
LDW280-17324-21
BENDR 3/32
33/64
JOG .090/.080
IML BUP
IML BUP
DRILL #40(.097-.102) 2 HOLES
LDW280-17324-23
AUX TEMP
DRILL #40(.097-.102) 2 HOLES
LDW280-17324-23
AUX TEMP
.050 (TYP)
2 1/4 (REF)
.063R (TYP)(REF)
1 3/4 (REF)
1.093 (REF)
.063 (TYP)(REF)
15
10
MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32
NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS
2. OPTIONAL METHOD OF MANUFACTURING IS MACHINING
GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK
SIZE C
CODE IDENT NO. 26512
LDW280-17324
R A
LEM
MODEL OR END ITEM
SCALE FULL
SHEET 3 OF 0
FOR PHOTO REPRODUCTION
LDW280-17324 A

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
PART NO.			

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW-280-25631	LEM-1(31)	2
LEM	LDW-280-25631	LTA-8(18)	2
LEM	LDW 280-25631	LTA-5(15)	2
PART NO. LDW 280-17324-23		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-25631	LEM-1(31)	1 EA
LEM	LDW280-25631	LTA-8(18)	1 EA
LEM	LDW280-25631	LTA-5(15)	1 EA
PART NO. LDW 280-17324-19,-21,-25		GAEC SCH NO. 51-5	

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00				
REV	B	B	B	B				
SHEET								
REV								
SHEET								
REV								

LAST SECT LTR USED		GRUMMAN REL INFO A/B	
LAST DASH NO. USED	-25	PRIM NO. 207	JR(001) MP124

ENG 77.1 9-64

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100		LINE ITEM #1	DOCUMENTATION TYPE II
DRAWN BY	C. ARMAS 11-5-65	RELIABILITY	
LAYOUT BY	A. MATTEI 10-26-65		
CHECKED BY	F 11-10-65		
GRP LEADER	J. Stuhlmacher 11/17/65		
VEH DES INT	11/18		
STRUCTURES	11/19	PROJ ENGR	T. Kelly 11/23/65
STRUCTURES	11/2	REL GROUP	11/24
WEIGHTS	11/22		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BRACKET
DESCENT STAGE~AFT RH BEAM PANEL
GOX MODULE SUPT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17324	B
SCALE FULL NONE		SHEET 1.00 OF 4	

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
				LEM	LDW-280-25631	LEM-1(31)	2	LEM	LDW280-25631	LEM-1(31)	1 EA
				LEM	LDW-280-25631	LTA-8(18)	2	LEM	LDW280-25631	LTA-8(18)	1 EA
				LEM	LDW 280-25631	LTA-5(15)	2	LEM	LDW280-25631	LTA-5(15)	1 EA
PART NO.		GAEC SCH NO.		PART NO. LDW 280-17324-23		GAEC SCH NO.		PART NO. LDW 280-17324-19,-21,-25		GAEC SCH NO. 51-5	

3

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10	2.00	3.00					
REV	B	B	B	B					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	
LAST DASH NO. USED	-25

GRUMMAN REL INFO B

PRIM NO.	JR(001)		
207	MP1241		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 | LINE ITEM #1 | DOCUMENTATION TYPE II

DRAWN BY	C. ARMAS 11-5-65	RELIABILITY	
LAYOUT BY	A. MATTEI 10-26-65		
CHECKED BY	11-10-65		
GRP LEADER	11/10/65		
VEH DES INT	11/18		
STRUCTURES	11/18	PROJ ENGR	11/23/65
STRUCTURES	HUGGAMAN 11/2	REL GROUP	11/24
WEIGHTS	11/17		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

BRACKET
DESCENT STAGE-AFT RH BEAM PANEL
GOX MODULE SUPT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17324	B

SCALE FULL NONE | SHEET 1.00 OF 4

ENG 77.1 9-64

Q1

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A		1.00, 2.00 3.00 & 4.00								ADDED SHEET 1.10. SH 1 OF 4 WAS 1 OF 3 DELETED LDW280-17324-11;13;15 & 17. ADDED -19;-21 & -23 ADDED GOX MODULE SUPT TO TITLE BLOCK	NOTED		-11, -13 -15 & -17	CASTELLANO 1-26-66		
B	1	1.00, 1.10, 2.00 & 3.00							E.O. B1	IN F/D, B/M & MOD/BLK ADDED -25 DOUBLER	LTA-5, -8 LEM-1	NOT	REQ'D	FOSTER 7-11-66		

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 5-64

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17324	B

SCALE NONE SHEET 1.10

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A		1.00, 2.00 3.00 & 4.00								ADDED SHEET 1.10. SH 1 OF 4 WAS 1 OF 3 DELETED LDW280-17324-11, 13, 15 & 17. ADDED -19, 21 & 23 (A) ADDED GOX MODULE SUPT TO TITLE BLOCK	NOTED		-11, -13 -15 & -17	C. CASTELLANO 1-26-66		
B	1	1.00, 1.10, 2.00 & 3.00							E.O. B1	IN F/D, B/M & MOD/BLK ADDED -25 DOUBLER (B)	LTA-5, -8 LEM-1	NOT	REQ'D	FOSTER 7-11-66	X	3-24-66

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 5-64

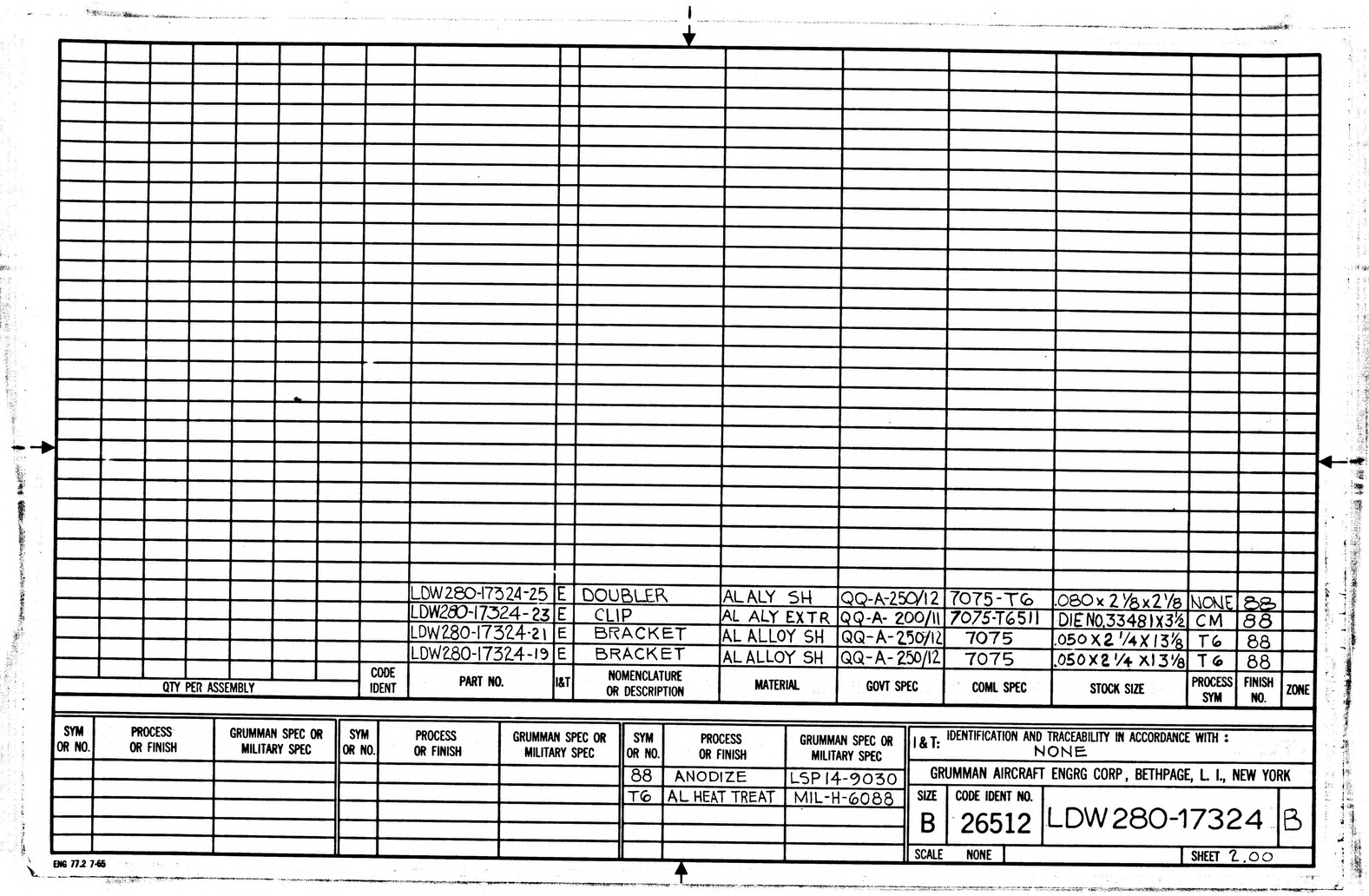
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17324	B

SCALE NONE | SHEET 1.10

01

NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17324-25	E	DOUBLER	AL ALY SH	QQ-A-250/12	7075-T6	.080 x 2 1/8 x 2 1/8	NONE	88	
		LDW280-17324-23	E	CLIP	AL ALY EXTR	QQ-A- 200/11	7075-T6511	DIE NO.33481X3½	CM	88	
		LDW280-17324-21	E	BRACKET	AL ALLOY SH	QQ-A-250/12	7075	.050 X 2 1/4 X 13/8	T6	88	
		LDW280-17324-19	E	BRACKET	AL ALLOY SH	QQ-A-250/12	7075	.050 X 2 1/4 X 13/8	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP 14-9030
T6	AL HEAT TREAT	MIL-H-6088

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW 280-17324	B

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17324-25	E	DOUBLER	AL ALY SH	QQ-A-250/12	7075-T6	.080 x 2 1/8 x 2 1/8	NONE	88	
		LDW280-17324-23	E	CLIP	AL ALY EXTR	QQ-A- 200/11	7075-T6511	DIE NO.33481 X 3 1/2	CM	88	
		LDW280-17324-21	E	BRACKET	AL ALLOY SH	QQ-A-250/12	7075	.050 X 2 1/4 X 13 1/8	T6	88	
		LDW280-17324-19	E	BRACKET	AL ALLOY SH	QQ-A-250/12	7075	.050 X 2 1/4 X 13 1/8	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP14-9030
T6	AL HEAT TREAT	MIL-H-6088

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17324	B

SCALE NONE SHEET 2.00

ENG 77.2 7-65

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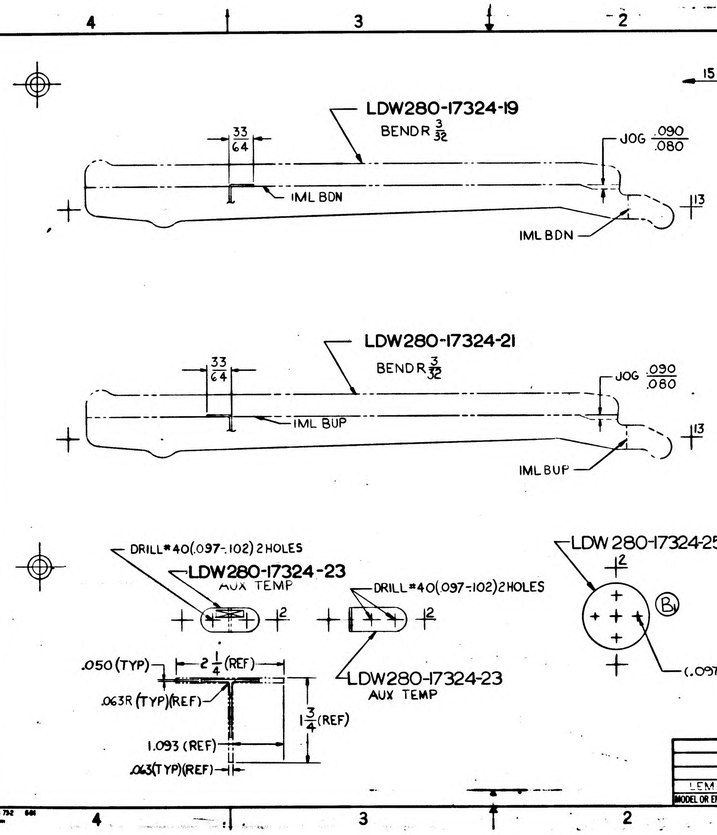
NAS 9-1100


LDW280-17324-19
BEND R 3/32
33/64
JOG .090/.080
IML BDN
IML BDN
LDW280-17324-21
BEND R 3/32
33/64
JOG .090/.080
IML BUP
IML BUP
DRILL #40(.097-.102) 2 HOLES
LDW280-17324-23
AUX TEMP
DRILL #40(.097-.102) 2 HOLES
.050 (TYP)
2 1/4 (REF)
.063R (TYP)(REF)
1 3/4 (REF)
1.093 (REF)
.063(TYP)(REF)
LDW280-17324-23
AUX TEMP
LDW 280-17324-25
(.097-.102) #40 DRILL 4 HOLES
15
10
NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS
2 OPTIONAL METHOD OF MANUFACTURING IS MACHINING
MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY
TOLERANCE ON LOFTED DELINEATIONS IS ± .032
GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK
SIZE C
CODE IDENT NO. 26512
LDW280-17324
B
LEM
MODEL OR END ITEM
SCALE FULL
SHEET 3
FOR PHOTO REPRODUCTION
LDW280-17324 B
LDW280-17324 B
LDW280-17324 B

01
NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-25597	LEM1(31)	1
LEM	LDW280-25597	LTA8(18)	1
LEM	LDW280-25597	LTA5(15)	1
PART NO. LDW280-17326-11-13-15&17		GAEC SCH NO. 502	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00					
REV	A	A		A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED

LAST DASH NO. USED -17

GRUMMAN REL INFO A
PRIM NO. (18001)
207 PP17

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 LINE ITEM I DOCUMENTATION TYPE II

DRAWN BY	C CASTELLANO 12-15-65	RELIABILITY	
LAYOUT BY	H KING 1/12/66		
CHECKED BY	EG 1-10-66		
GR LEADER			
VEH DES INT			
STRUCTURES		PROJ ENGR	
STRUCTURES		REL GROUP	
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CHANNEL
DESCENT STAGE-POWER CONNECTOR SUPPORT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17326	A

SCALE NONE SHEET 1.00 OF 4

ENG 77.1 9-64

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10, 3.00	B8					EO A1	TRIMMED 1/2" ON -13 & -15 ~ SH 1 OF 4 WAS SH 1 OF 3 ADDED SH 1.10 (R)	LTA-5, LTA-8, LEM 1	✓		K Schuck 9-10-66		

CHG APPROVED	LTR	GROUP LDR	NEW DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY					
	A											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

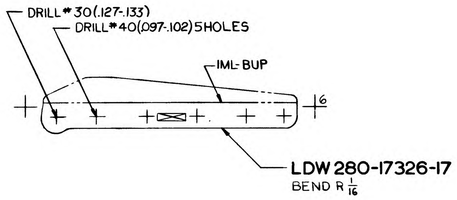
SIZE	CODE IDENT NO.		
B	26512	LDW280-17326	A

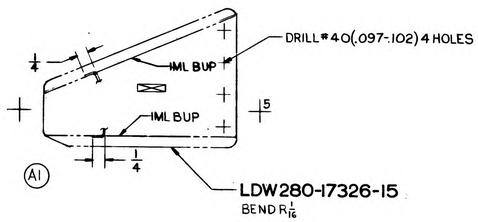
SCALE NONE SHEET 1.10

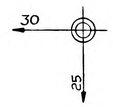
ENG 77.16 3-66

01

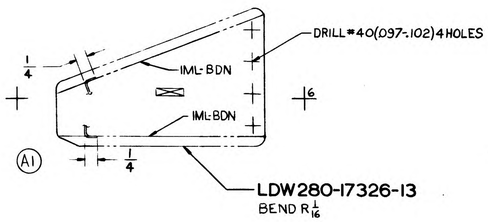
NAS 9-1100

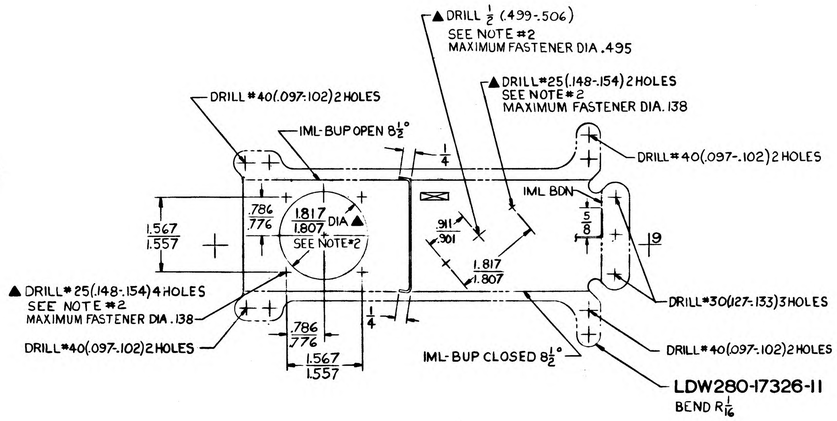






NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. HOLES MARKED ▲ FORM PART OF AN LRE INTERFACE. FOR COMPLETE HOLE PATTERN SEE NEXT ASSEMBLY DRAWING LDW280-25597





MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010; .063R TO .250R ± .015; OVER .250R ± .020	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
250 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL X DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	✓
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

TRAM, R, F.

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I. NEW YORK

SIZE	CODE IDENT NO.		
F	26512	LDW280-17326	A

LEM | MODEL OR END ITEM | SCALE F-ULL | SHEET 3

LDW280-17326 D
LDW280-17326 C
LDW280-17326 B
A

FOR PHOTO REPRODUCTION

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17326-17	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.032 X 2 X 6 1/8	T6	88	
		-15		CHANNEL				.032 X 3 5/8 X 4 3/4			
		-13		CHANNEL				.032 X 3 5/8 X 5 1/8			
		LDW280-17326-11	E	CHANNEL	AL ALLOY SH	QQ-A-250/12	7075	.032 X 5 3/8 X 9	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17326

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

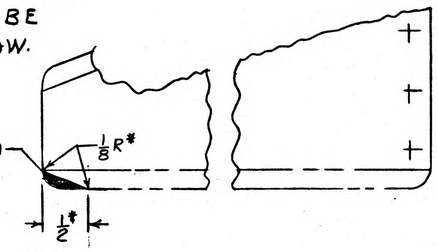
DWG. NO. LDW280-17326 | EO NO. A1

LIAISON ENGINEERING #5 ENGINEERING ORDER

CONTROL INFO NO. LEM5-9002

ON -13 AND -15 TRIM PARTS 1/2" AS SHOWN

* THESE DIMENSIONS ARE FOR LAYOUT REF ONLY NOT TOBE ADDED TO DRAW.



REWORKED AREA MAY BE BRUSHED ALODINED

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

5

REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
CONNECTOR INTERFERES	TRIMMED 1/2" ON-13 & -15	FS 6256 / FTB

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LEM		LTA-5(1S)	
		LTA-8(1B)	
		LEM 1 (3I)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK ✓ | SCRAP

	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	CONT
	[illegible]	9/1	8-20-66	VDI		8-22-66	8-20-66	8-7-66	8-23-66
	LBB	9/19/66							

PRIORITY: C

DRAWING TITLE: CHANNEL DESCENT STAGE POWER CONNECTOR SUPPORT

DRAWING NO.: LDW 280-17326

EO NO.: A1

ISSUED BY LIAISION J.GRASSIANO X6452 SECTION VDI STAAKOSCH GROUP NO. 335 PL 35

01

NAS 9-1100

								LEM	LDW280-23598	LEM-6(36)	2
										LEM-5(35)	2
										LEM-4(34)	2
										LEM-3(33)	2
										LEM-2(32)	2
										LEM-1(31)	2
										LTA-8(18)	2
								LEM	LDW280-23598	LTA-5(15)	2
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.		PART NO.		GAEC SCH NO.		PART NO. LDW280-17327-11		GAEC SCH NO. 51-5	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10	2.00	3.00					
REV	A	A							
SHEET									
REV									
SHEET									
REV									
LAST SECT LTR USED									
LAST DASH NO. USED	-11								

GRUMMAN REL INFO

PRIM NO.	LE(001)		
	207	AP12	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100		LINE ITEM 1	DOCUMENTATION TYPE II
DRAWN BY	F. HACKERT 1-6-66	RELIABILITY	
LAYOUT BY	A. Richter 1/10/66		
CHECKED BY	EG for 1-7-66		
GP LEADER	Jos. deSouza 1/10/66		
VEH DES INT	Herb W. BISCHOFF 1/10/66		
STRUCTURES	DISPM J. Hackert 2/14/66	PROJ ENGR	J. Caubre 2/23
STRUCTURES	H. Silverman 2/15	REL GROUP	R. Smith 3/7/66
WEIGHTS	W. R. Hardman 2/17		

GRUMMAN AIRCRAFT ENGRG CORP
• BETHPAGE, L. I., NEW YORK

BRACKET
DESCENT STAGE - S-BAND CABLE
CANISTER SUPPORT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17327	A

SCALE NONE SHEET 1.00 OF 4

ENG 77.1 9-64

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.		PART NO.		GAEC SCH NO.					
								LEM	LDW280-23598	LEM-6(36)	2
										LEM-5(35)	2
										LEM-4(34)	2
										LEM-3(33)	2
										LEM-2(32)	2
										LEM-1(31)	2
										LTA-8(18)	2
								LEM	LDW280-23598	LTA-5(15)	2
								MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
								PART NO. LDW280-17327-11		GAEC SCH NO. 51-5	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00	1.10	2.00	3.00						
REV	A	A								
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	
LAST DASH NO. USED	-11

GRUMMAN REL INFO

PRIM NO.	LE(001)		
207	AP12		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 LINE ITEM 1 DOCUMENTATION TYPE II

DRAWN BY	F. HACKERT 1-6-66	RELIABILITY		GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK
LAYOUT BY	A. Richer 1/10/66			
CHECKED BY	EG 1-7-66			BRACKET
GP LEADER	A. Alexander 1/10/66			DESCENT STAGE - S-BAND CABLE CANISTER SUPPORT
VEH DES INT	W. BISCHOFF 1-10-66			
STRUCTURES	2/14/66	PROJ ENGR	J. Carbee 2/23	SIZE B | CODE IDENT NO. 26512 | LDW280-17327 | A
STRUCTURES	2/15	REL GROUP		SCALE NONE | SHEET 1.00 OF 4
WEIGHTS				

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00 & 1.10						LEO 280-137	SH 1 OF 4, WAS SH 1 OF 3, ADDED SH 1.10. FOR -11 REMOVED LTA-3 EFF.	LTA-3(13)		✓	E SULSEMI 7-7-65		

CHG APPROVED	LTR	GROUP LDR	VEH. DES. INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY					
	A											

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17327	A

SCALE NONE SHEET 1.10

ENG 77-18 3-66

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00 & 1.10						LEO280-137	SH 10F4, WAS SH 1 OF 3, ADDED SH 1.10, FOR -11 REMOVED LTA-3 EFF.	LTA-3(13)		✓	[illegible]	X	X

CHG APPROVED	LTR	GROUP LDR	VEH. DES. INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
	A						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

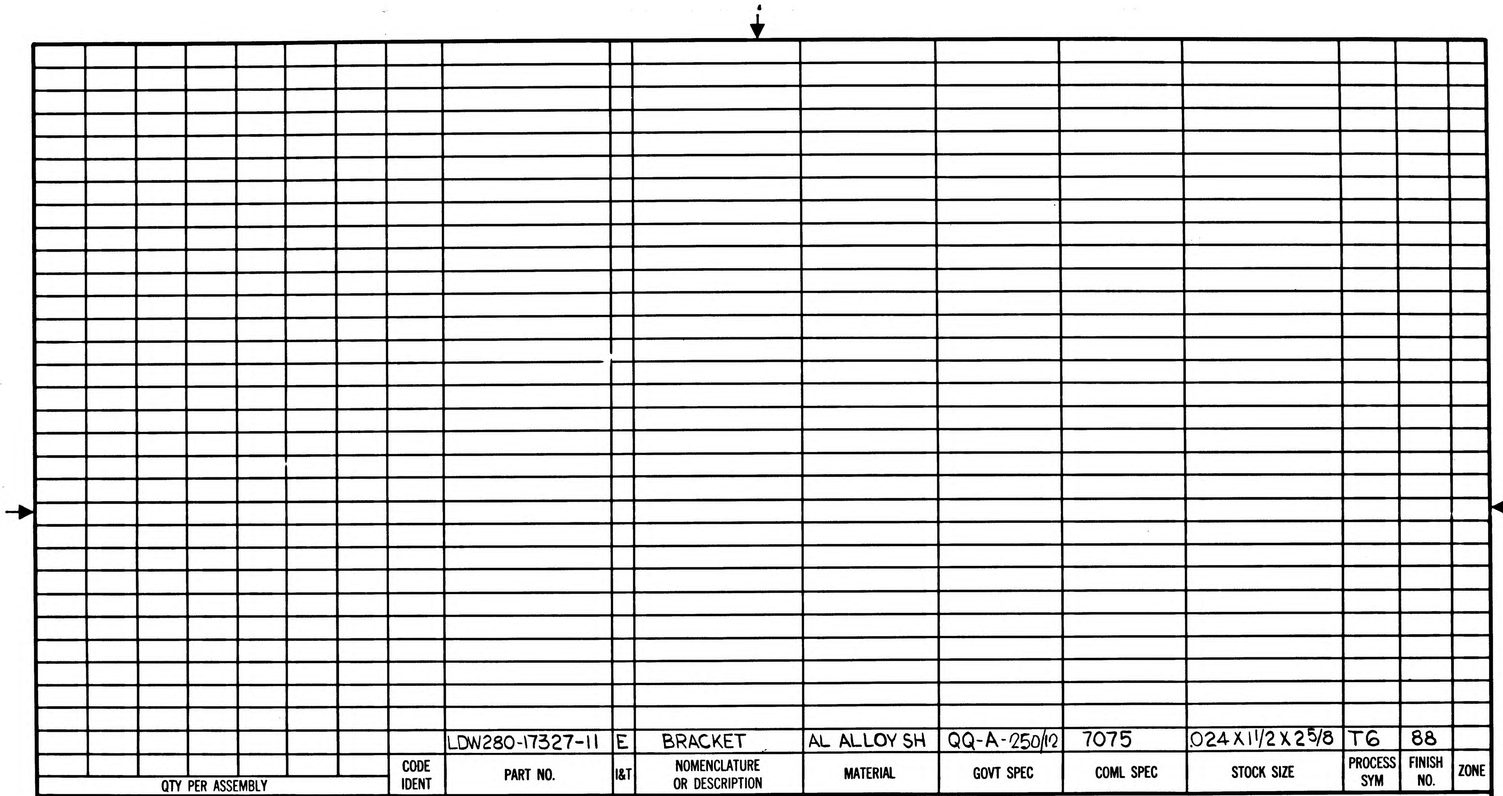
SIZE	CODE IDENT NO.		
B	26512	LDW280-17327	A

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17327-11	E	BRACKET	AL ALLOY SH	QQ-A-250/12	7075	.024 X 11/2 X 25/8	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17327

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

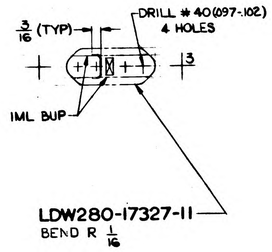
NOTES
1. NO TOOLING HOLES PERMITTED IN PART.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	✓
TOLERANCE ON LOFTED DELINEATIONS IS ±1/32	✓

15

10



LDW280-17327

	GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK		
LEM MODEL OR END ITEM	SIZE C	CODE IDENT NO. 26512	LDW280-17327
	SCALE FULL		SHEET 3.00

4 3 2 FOR PHOTO REPRODUCTION 1 K2

NAS 9-1100

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ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

LIAISON ENGINEERING #5 ENGINEERING ORDER

DWG NO. LDW280-17327 | EO NO. B2

CONTROL INFO NO. LM-5-9366

LDW280-17327-11 N/A LDW280-23598
S/B LDW280-23691 (CANISTER ASSY.).

MODEL		GAEC UNIT NO.
LM		LM-6 (36)
LM		LM-5 (35)
LM		LM-4 (34)
LM		LM-3 (33)
LM		LM-2 (32)
LM		LM-1 (31)

TO LM-15(45)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: TO REMOVE -11 FROM INSTL. AND INSTALL ON ASSY.

DESCRIPTION OF EO: ON-11 N/A LDW280-23691 WAS LDW280-23598.

GAEC EO RELEASE: B C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3 (13)	
		LTA-5 (15)	
		LTA-8 (18)	

DRAWING CHANGE REQD: REVISE DWG | RECORD EO | DISPOSITION OF PARTS: REWORK | SCRAP

PRIORITY: C

DRAWING TITLE: BRACKET D/S-S-BAND CABLE CANISTER SUPT

	APPROVED BY	DATE
SUPPORT		
RELIAB GROUP		
GROUP LEADER	JJ	10-15-66
STRESS GROUP	CH	10-12-66
LIAISON ENGRG	[illegible]	10-19-66
PROJ ENGRG	[illegible]	10-17-66
-GOVT-		

10-11-66 VDI

DRAWING NO. LDW280-17327 EO NO. B2

ISSUED BY LIAISON - J. JARVIS X6852 SECTION V.D.I. GROUP NO. 280 PL. 35

01

NAS 9-1100

C

ENG 22.1 REV 3-68

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-17327 | EO NO. B3
CONTROL INFO NO. LDW280A5805

FOR LDW280-17327-11, REMOVE LH-1 (31) REQMTS.

DETAIL SPEC REQ	CL II ENGRG CHG	✓	CL I ENGRG CHG	

REASON FOR EO: CORRECT EFFECT. TO AGREE WITH ASSY DWG.

DESCRIPTION OF EO: FOR -11 REMOVED LH-1 (31) REQMTS.

2 C

GAEC EO RELEASE: JK 3/13/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAFC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-1 (31)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK | SCRAP ✓
APPROVED BY: [illegible] | DATE 3/4/67 | 6 | V.D.I. | SUPPORT | RELIAB. GROUP

GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
3/8/67	3/10/67		3-14-67
			—conc—

PRIORITY: C
DRAWING TITLE: BRACKET ~D.S.~ S-BAND CABLE CANISTER SPT
DRAWING NO.: LDW280-17327
EO NO.: B3

ISSUED BY: Gus HANSMANN X1153 SECTION: V.D.I. GROUP NO.: 280 PL: 35

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | ED NO. 1374
CONTROL INFO NO. LDW280B7394

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17323 ✓	B3	SEE DWG
-17327 ✓	B4	
-17330	E1	
-17337	D1	
-17341	E1	
-17343	C3	
-17344	B3	
-17347	B3	
-17348	C4	
LDW280-17349	C1	SEE DWG

* APPLICABLE DASH NOS

DETAIL SPEC REQ | CL II ENGRG CNG | CL I ENGRG CNG | ✓ LCD 3587 PKG 50 PG. 8 CCA 1821 (5)

REASON FOR EO: LM-15(45) NO LONGER REQD.

DESCRIPTION OF EO: DELETED LM-15(45) EFF. FROM —*

GAEC EO RELEASE: X

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD ED	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGR	PROJ ENGR
LM		LM-1545		✓			✓	VDI	4-26-69			4-26-69	4-26-69		

PRIORITY: C | DRAWING TITLE: SEE DWG | DRAWING NO: LEO 280 | ED NO. 1374

PS 2869 ISSUED BY MEVORAH / THORTUSEN X86046 SECTION VEH DES INT GROUP NO. 335 - 25

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NAS 9-1100

EMO 32.1 REV 3-68

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1541
CONTROL INFO NO. LDW 280B 8079

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (4G) [redacted]
ADD LTA-11 ([redacted] 23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING Nº *	TITLE	CHANGE Nº
LDW280-17337	SEE DWG	D2
341		E2
343		C4
344		B4
347		B4
348		C5
349		C2
356		B4
362		B6
LDW280-17327	SEE DWG	B5

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG 99 Pg 3-4 & 5 & 96 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: JG 8-8-69; JH 8/N/9; [illegible] 8-9-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11 ([redacted] 23)	

DRAWING CHANGE REQD: ✓ REVISE DWG; RECORD EO

DISPOSITION OF PARTS: NOT REQ'D; REWORK; SCRAP

APPROVED BY								
DATE	7-29-69			8-1-69	N			8-9-69
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	[illegible]

PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO.: LEO 280
EO NO.: 1541

8-12-69 ISSUED BY G. HANSMANN X87222 (ML) SECTION VDI GROUP NO 335 PL 25

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	
LEM	LDW280-25539	LEM-1(31)	1EA
LEM	LDW280-25539	LTA-8(18)	1EA
LEM	LDW280-25539	LTA-5(15)	1EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17328-15 & -17		GAEC SCH NO.	
LEM	LDW280-25539	LEM-1(31)	1EA
LEM	LDW280-25539	LTA-8(18)	1EA
LEM	LDW280-25539	LTA-5(15)	1EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17328-11 & -13		GAEC SCH NO. 51-3	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1		2	3						
REV										
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED		GRUMMAN REL-INFO			
LAST DASH NO. USED	-17	PRIM NO.	(E001)		
		207	PP10		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100 | LINE ITEM 1 | DOCUMENTATION TYPE II

DRAWN BY	V. NARONIS 10-19-65	RELIABILITY		GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK
LAYOUT BY	G. BARNES 10/29/65			
CHECKED BY	D. FASS 10-23-65			STIFFENER
GP. LEADER	[signature] 10/29/65			DESCENT STAGE-AFT LH BEAM PANEL-LOWER
VEH. DES. INT	[signature] 11/4/65			
STRUCTURES	[signature] 11/4/65	PROJ ENGR	[signature] 11/4	SIZE B | CODE IDENT NO. 26512 | LDW280-17328
STRUCTURES	[signature] 11/3	REL GROUP	[signature] 11/5	SCALE NONE | SHEET 1 OF 3
WEIGHTS	W. G. Morales 11/4			

SWIP

ENG 77.1 9-64

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17328-17	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.028x1 3/4x11 1/2	T6	88	
		LDW280-17328-15	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.028x1 3/4x11 1/2	T6	88	
		LDW280-17328-13	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.071x1 3/4x10 1/8	T6	88	
		LDW280-17328-11	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.071x1 3/4x10	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

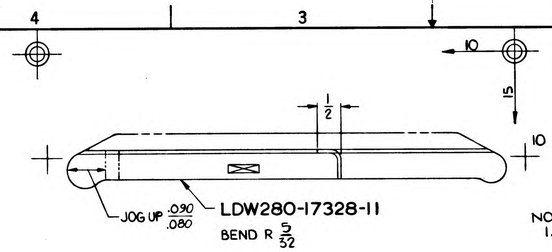
SIZE	CODE IDENT NO.	
B	26512	LDW280-17328

SCALE NONE SHEET 2

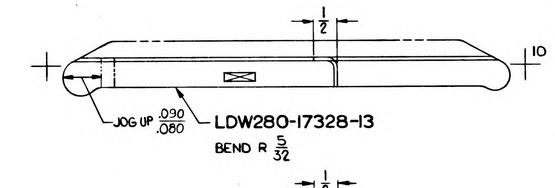
ENG 77.2 7-65

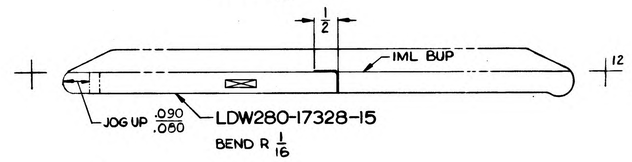
01

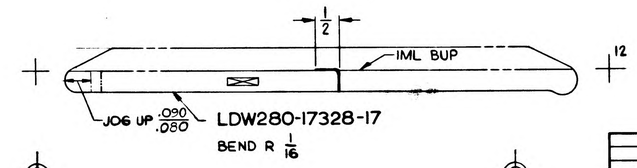
NAS 9-1100



NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.







MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	✓
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
C	26512	LDW280-17328

LEM — MODEL OR END ITEM — SCALE FULL — SHEET 3

FOR PHOTO REPRODUCTION

LDW280-17328

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO 280 | EO NO. 89
CONTROL INFO NO. LDW280-5898

ON THE FOLLOWING DRAWINGS FOR ALL DASH NUMBERS THAT NEXT ASSEMBLE ON LDW280-25539 CHANGE N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QUANTITIES REMAIN SAME

DWG No	CHANGE No	TITLE
LDW280-17306	A1	SEE DRAWINGS
LDW280-17278	B2	
LDW280-17277	B2	
LDW280-17221	A2	
LDW280-17219	A2	
LDW280-17175	A2	
LDW280-17174	A1	
LDW280-17169	A1	
LDW280-17167	A4	
LDW280-17139	B3	
LDW280-17408	A1	
LDW280-17407	A2	
LDW280-17400	A2	
LDW280-17356	A3	
LDW280-17355	A1	
LDW280-17348	A4	
LDW280-17344	A3	
LDW280-17341	B2	
LDW280-17329	A2	
LDW280-17328	A1	
LDW280M17342	A1	
LDW280M17247	B1	
LDW280M17139	B1	
LDW280M17115	B1	
LDW280M17110	B4	
LDW280-17448	A1	
LDW280-17450	A2	
LDW280-17447	A1	
LDW280-17445	A1	
LDW280-17439	A1	
LDW280-17410	A3	SEE DRAWINGS

NAS 9-1100

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: CREATE N/A TO ACCOMMODATE LINE RUN

DESCRIPTION OF EO: FOR ALL DASH NUMBERS THAT NEXT ASSEMBLED ON LDW280-25539 CHANGED N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QTY REMAIN SAME

GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REWORK | REQD SCRAP

APPROVED BY	DATE	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
[illegible]	10/6/66	VDI	[illegible]	[illegible]	[illegible]	[illegible]
WBM	4/4					

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 89

ISSUED BY: A. MEVORAH / J. STRAKOSCH
SECTION: VDI
GROUP NO.: 335
PL: 35

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-25539	LEM-1(31)	1EA
LEM	LDW280-28539	LTA-8(18)	1EA
LEM	LDW280-25539	LTA-5(15)	1EA
PART NO. LDW280-17329-11,-15 & -17		GAEC SCH NO. 51-3	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1	1.10	2	3						
REV	A	A	A	A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	
LAST DASH NO. USED	-17

GRUMMAN REL^S INFO A

PRIM NO.	LE(001)		
207	PP+O	MPSA	X

ENG 77.1 9-64

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS9-1100 | LINE ITEM 1 | DOCUMENTATION TYPE II

DRAWN BY	V. NARONIS 10-20-65	RELIABILITY	
LAYOUT BY	G. BARNES 10-24-65		
CHECKED BY	J.S. 10-23-65		
G.P. LEADER	[signature] 10/28/65		
VEH. DES. INT.	[signature] 10/28		
STRUCTURES	[signature] 10/28/65	PROJ ENGR	[signature] 11-3-65
STRUCTURES	[signature] 11-1	REL GROUP	[signature] 11-3-65
WEIGHTS	W. E. Ryan Dias 11-2		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER
DESCENT STAGE-AFT LH BEAM PANEL-UPPER

SIZE	CODE IDENT NO.		
B	26512	LDW280-17329	A

SCALE NONE | SHEET 1 OF 4

(2)

SWP

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1, 1.10, 2 & 3					✓	E.O. A1	IN FIELD, B/M & MODEL BLOCK REMOVED -13 STIFFENER; ADDED -17 STIFFENER. (SH. 1 OF 4 WAS SH. 1 OF 3, ADDED SH. 1.10.)	LEM-1 LTA-5,-8		-13 -48	PARRAS 5-23-66		
	2	1, 1.10						LEO280-89	FOR ALL DASH NUMBERS THAT NEXT ASSEMBLED ON LDW280-25539 CHANGED N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QTY REMAIN SAME	LTA-8	NOT REQD		LOEW 4-28-66		

FOR CONTINUATION OF REVISIONS SEE SHEET _____

ENG 77.3 5-65

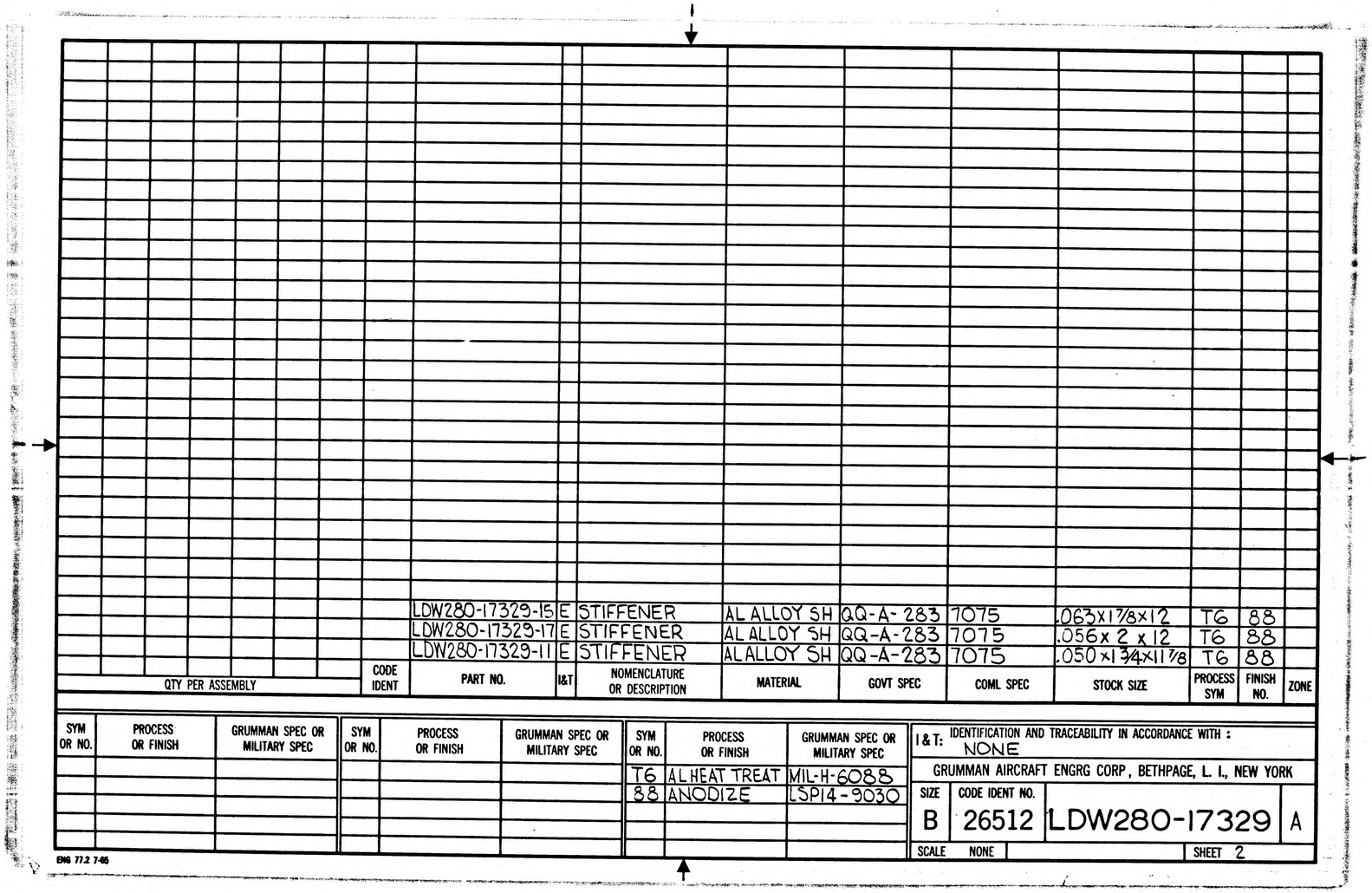
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17329	A

SCALE NONE — SHEET 1.10

01

NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17329-15	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.063x17/8x12	T6	88	
		LDW280-17329-17	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.056x 2 x12	T6	88	
		LDW280-17329-11	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.050x13/4x117/8	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17329	A

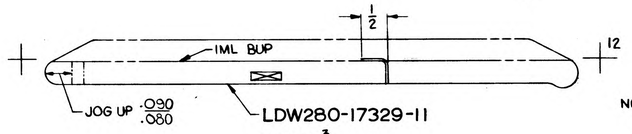
SCALE NONE SHEET 2

ENG 77.2 7-65

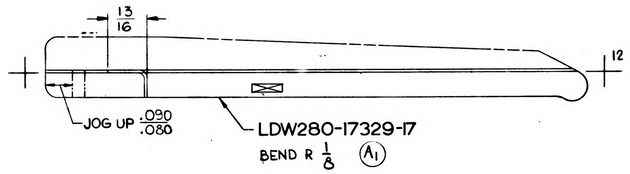
01

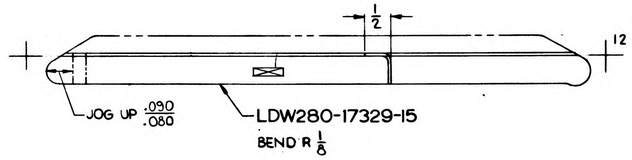
NAS 9-1100

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▨ USE BOTH SIDES IF NECESSARY.	✓
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓



NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.





GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK				
LEM	SIZE C	CODE IDENT NO. 26512	LDW280-17329	REV A
MODEL OR END ITEM	SCALE FULL		SHEET 3	

FOR PHOTO REPRODUCTION

LDW280-17329 A

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO 280 | EO NO. 89
CONTROL INFO NO. LDW280-5898

ON THE FOLLOWING DRAWINGS FOR ALL DASH NUMBERS THAT NEXT ASSEMBLE ON LDW280-25539 CHANGE N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QUANTITIES REMAIN SAME

DWG No	CHANGE No	TITLE
LDW280-17306	A1	SEE DRAWINGS
LDW280-17278	B2	
LDW280-17277	B2	
LDW280-17221	A2	
LDW280-17219	A2	
LDW280-17175	A2	
LDW280-17174	A1	
LDW280-17169	A1	
LDW280-17167	A4	
LDW280-17139	B3	
LDW280-17408	A1	
LDW280-17407	A2	
LDW280-17400	A2	
LDW280-17356	A3	
LDW280-17355	A1	
LDW280-17348	A4	
LDW280-17344	A3	
LDW280-17341	B2	
LDW280-17329	A2	
LDW280-17328	A1	
LDW280M17342	A1	
LDW280M17247	B1	
LDW280M17139	B1	
LDW280M17115	B1	
LDW280M17110	B4	
LDW280-17448	A1	
LDW280-17450	A2	
LDW280-17447	A1	
LDW280-17445	A1	
LDW280-17439	A1	
LDW280-17410	A3	SEE DRAWINGS

NAS 9-1100

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: CREATE N/A TO ACCOMMODATE LINE RUN

DESCRIPTION OF EO: FOR ALL DASH NUMBERS THAT NEXT ASSEMBLED ON LDW280-25539 CHANGED N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QTY REMAIN SAME

(R) GAEC EO RELEASE: 4/7/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: NOT REWORK	REQD SCRAP
✓			

APPROVED BY: DATE 4/6 | VDI | RELIAB. GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG | GROUP

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO 280

EO NO.: 89

ISSUED BY A. MEVORAH/J. STRAKOSCH SECTION VDI GROUP NO. 335 PL 35

1

LDW420-2370-003			
LDW420-2370	LDW420-2386	SER # 1	2
LM	LDW280-54520	LTA-3 D/R	
		LM-15(45)	
		THRU	
	LDW280-54520	LM-4(34)	
	LDW280-53520	LM-3(33)	
	LDW280-52520	LM-2(32)	
LM	LDW280-23520	LTA-3(13)	1

PART NO. LDW280-17330-38

LFM420-2370-003			
LDW420-2370	LDW420-2386	SER # 1	2
LM	LDW280-54521	LTA-3 D/R	
		LM-15(45)	
		THRU	
	LDW280-54521	LM-4(34)	
	LDW280-53521	LM-3(33)	
	LDW280-23521	LM-2(32)	
LM	LDW280-23521	LTA-3(13)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17330-37 GAEC SCH NO.

LFM420-2370-003			
LDW420-2370	LDW420-2386	SER # 1	2 EA
LM	LDW280-54520	LTA-3 D/R	1 EA
		LM-15(45)	
		THRU	
	LDW280-54520	LM-4(34)	
	LDW280-53520	LM-3(33)	
	LDW280-28520	LM-2(32)	
	LDW280-28520	LM-1(31)	
	LDW280-28520	LTA-8(18)	
	LDW-280-25520	LTA-5(15)	
LM	LDW280-23520	LTA-3(13)	1 EA

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17330-32, -34 & -36 GAEC SCH NO.

LM	LDW280-28520	LM-1(31)	1
LM	LDW280-28520	LTA-8(18)	1
LM	LDW280-25520	LTA-5(15)	1

PART NO. LDW280-17330-42

LM	LDW280-25521	LM-1(31)	1
LM	LDW280-25521	LTA-8(18)	1
LM	LDW280-25521	LTA-5(15)	1

PART NO. LDW280-17330-41

LFM420-2370-003			
LDW420-2370	LDW420-2386	SER # 1	2 EA
LM	LDW280-54521	LTA-3 D/R	1 EA
		LM-15(45)	
		THRU	
	LDW280-54521	LM-4(34)	
	LDW280-53521	LM-3(33)	
	LDW280-23521	LM-2(32)	
	LDW280-25521	LM-1(31)	
	LDW280-25521	LTA-8(18)	
	LDW280-25521	LTA-5(15)	
LM	LDW280-23521	LTA-3(13)	1 EA

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17330-31, -33 & -35 GAEC SCH NO. 51-3

(5.)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	1.11		2.00	3.00			
REV	D	D	D		D	D			
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED		GRUMMAN REL INFO D		
		PRIM NO.	VK(100)	EMF
LAST DASH NO. USED	-42	207	ME-D 1/22/19	-

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS – DECIMALS – ANGLES
± 1/32 ± .020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100 LINE ITEM # 1 DOCUMENTATION TYPE II

DRAWN BY	A.MULLER 7/65	RELIABILITY	
LAYOUT BY	T. AMBROSIO 7/19		
CHECKED BY	EG 7-2265		
GR LEADER			
VEH DES INT			
STRUCTURES			
STRUCTURES			
WEIGHTS		PROJ ENGR	

(R) GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

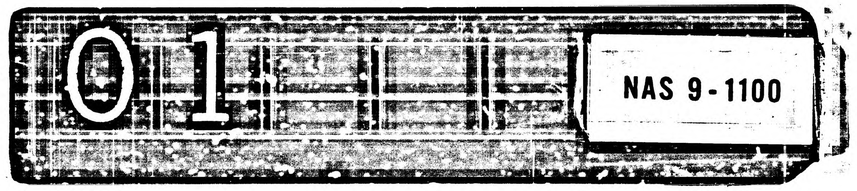
ANGLE
DESCENT STAGE-RH & LH UPPER DECK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17330 D

SCALE NONE SHEET 1.00 OF 5

(D)

32.1 9-64



REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SUPERSEDING CHANGE LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	QUALITY APPD
A	1	1,1.10,2 & 3							E O A1	REMOVED -11,-12,-13,-14,-15,-16,-17,-18, & -19 ADDED -21,-22 -23,-24,-25,-26,-27,-28 & -29. SH. 1 OF 4 WAS 1 OF 3 ADDED SH. 1.10	NOTED		✓	L.DIXON 12-20-65		
	2	1,1.10,2 & 3							E O A2	REMOVED -27 & -28 ADDED -31 & -32.	NOTED		-27 & -28	SVOBODA 1-20-66		
	3	1,1.10,2 & 3	3C 6B						E O A3	REMOVED -21,-22,-23,-24-25,-26,-31 & -32 ADDED -33,-34,-35, -36,-37,-38,-39 & -40	NOTED		✓	L DIXON 1-27-66		
	4	1,1.10,2 & 3								REF E O A3 -25, 26-31 & 32 ARE NOT REMOVED, -37,-38,-39 & -40 ARE NOT ADDED	NOT REQD	NOT	REQD	48		
B	1								E O B1	SUPERSEDED BY E.O. B2	NOT REQD	NOT	REQ'D	F. TUDDO 2-23-66		
	2	1.00 1.10 2.00 3.00							E O B2	SUPERSEDES E.O. B1. IN FLD & B/M ADDED -41, (1) REQ'D, N/A LDW280-25521, LTA-5(15), LTA-8(18), LEM-1(31) ; DELETED -37,(1) REQ'D, N/A LDW280-25521; ADDED -42 (1) REQ'D, N/A LDW280-25520; DELETED -38,(1) REQ'D, N/A LDW280-25520.	LTA-5(15) LTA-8(18) LEM-1(31)		✓			
	3									(R) REF. E.O. B2 -37 & -38 DOES NOT EXIST PER ITEMS A3 & A4.	NOT REQD	NOT	REQ'D	5-13-66		
C	1	1.00 & 1.10							LEO280-159	FOR -34,-36-42 & -32 N/A WAS LDW280-25531 EFF LTA-5, -8 & LEM-1 ADDED N/A LDW280-28520 FOR LTA-8 & LEM-1	LTA-8 & LEM-1	NOT	REQD	DAVELLA 9-20-66		
	2	1.10								REF LEO280-159 (C1) LDW280-25531 SHOULD BE LDW280-25520	NOT REQD	NOT	REQD	GREY 10-17-66		
	3	1.00 & 1.10								(R) IN M/B LDW280-52520 WAS LDW280-23520 FOR LEM-2 THRU LEM-6 ON -26 & -29	NOTED	NOT	REQ'D			
D	1	1.00 1.10								INC LEO280-301	LEM-7 THRU -15			M. VUPPE 4-14-67		
	2	1.00 2.00 3.00								INC EO D2	LTA-3 LTA-5 LTA-8 LM-1 THRU LM-15		H.D.			

FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

ENG 77.3 5-64

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17330	D

SCALE NONE SHEET 1.10

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
D	3	1.00 1.11							INC LEO 280-541 ADDED SH 1.11	LTA-3 D/R			M. JUPPE 4-14-69		
	4	1.00							INC LEO 280-626	LM-3 THRU LM-15, LTA-3 D/R					
	5	1.00		LFM 420-2370-003					INC LEO 280-826	SER # 1		E.J.			
	6	1.00		LFM 420-2370-003				(R)	INC. LEO 280-1217						

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
	D						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17330	D

SCALE NONE SHEET 1-11

ENG 77.18 3-66

01

NAS 9-1100

QTY PER ASSEMBLY	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	LDW280-17330-38	E		ANGLE	AL ALY SH	QQ-A-250/12	7075	.056 x 1 3/4 x 5 7/8	T6	88	
	-37							.056 x 1 3/4 x 5 7/8			
	-36							.050 X 1 3/4 X 7			
	-35							.050 X 1 3/4 X 7			
	-34							.056 X 1 3/4 X 6			
	-33							.056 X 1 3/4 X 6			
	-32							.056 X 1 3/4 X 7			
	-31							.056 X 1 3/4 X 7			
	-42							.056 X 2 X 6			
	LDW280-17330-41	E		ANGLE	AL ALY SH	QQ-A-250/12	7075	.056 X 2 X 6	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17330	D

SCALE NONE SHEET 2.00

ENG 77.2 5-64

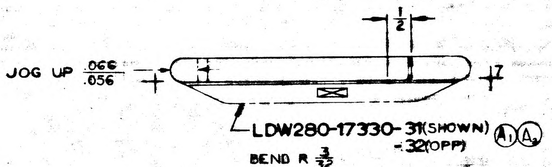
01

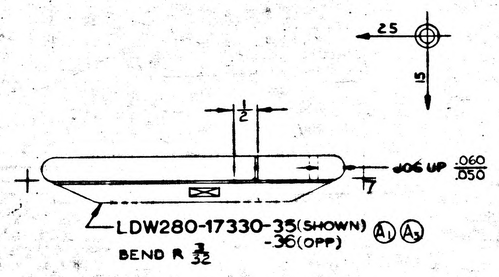
NAS 9-1100

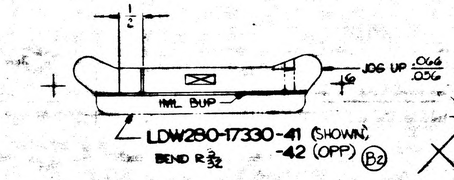
LDW280-17330 D

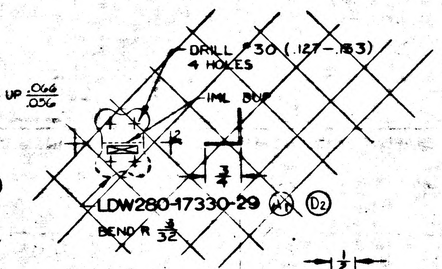
NOTES:

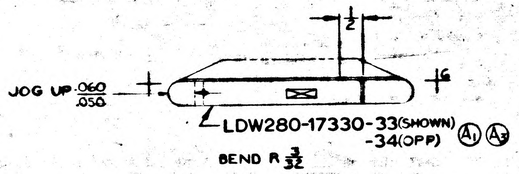
1. NO TOOLING HOLES PERMITTED IN PARTS.

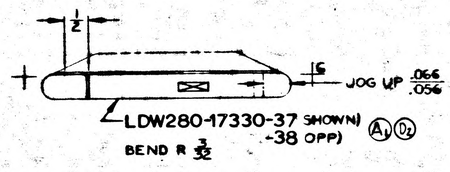












MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED BOXES CHECKED ☑ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .062R TO .063R ± .008 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 REF. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MIN.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED ▭ MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING ON HOLES.	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
250 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS BREAK ALL EDGES .005-.015	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ▽ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, MS & NS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK			
SIZE D	CODE IDENT NO. 26512	LDW280-17330	D
MODEL OR END ITEM LM	SCALE FULL		SHEET 3.00

FOR PHOTOREPRODUCTION

LDW280-17330 D

ENG 32.1 REV 3-65

A

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER EMF-A

DWG. NO. LDW280-17330		EO NO. D2
CONTROL INFO NO. LM-2-3178		

IN FLD/DWG, E/M & MOD/ELK, DELETE -29 FOR ALL EFFECTIVITIES

IN FLD/DWG, E/M & MOD/ELK, DELETE -25 & -26 FOR ALL EFFECTIVITIES
IN FLD/DWG, E/M & MOD/ELK, ADD -37 & -38 (-37 & -38 ARE IDENTICAL TO -25 & -26)
NEXT ASSY FOR -37 IS LDW280-23521 1 REQD/MODULE
EFFECTIVITY LTA-3(13), LM-2(32) THRU LM-15(45)
NEXT ASSY'S FOR -38 IS LDW280-23520 FOR LTA-3(13)
LDW280-52520 FOR LM-2(32) THRU LM-15(45)
1 REQD/MODULE FOR EACH NEXT ASSY
(NOTE: PARTS REIDENTIFIED TO AGREE WITH NEXT ASSY PRINTS)
FOR REWORK, ONLY REIDENTIFICATION OF PARTS IS REQUIRED)
IN MOD/ELK FOR -32, -34 & -36
ADD NEXT ASSY LDW280-23520; 1 EA REQD/MOD; EFF LTA-3(13)
LDW280-52520; 1 EA REQD/MODULE
EFFECTIVITY LM-2(32) THRU LM-15(45)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: ADDITIONAL EFFECTIVITY REQD PART CALLOUTS DISAGREE WITH NEXT ASSY'S. -29 NOT REQD

DESCRIPTION OF EO: IN FLD, E/M & MOD/ELK, DELETED -25, -26 & -29.
IN FLD, E/M & MOD/ELK, ADDED -37 & -38.
IN MOD/ELK, FOR -32, -34 & -36, ADDED LTA-3, LM-2 THRU LM-15.

GAEC EO RELEASE: D C 02025

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LTA-3(13) LTA-3(15)	
		LTA-3(18) LM-1(32) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG √; RECORD EO
DISPOSITION OF PARTS: REWORK; SCRAP √
PRIORITY: C
DRAWING TITLE: ANGLE-DESCENT STAGE R.H. & L.H. UPPER DECK
DRAWING NO.: LDW280-17330
EO NO.: D2

APPROVED BY	DATE							
	-/-	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
						11-9-67	11-11-67	11-10-67

ISSUED BY LIAISON J. MALONEY 11/7/67 X3604 SECTION V.D.I. GROUP NO. 335 PL 35

01 NAS 9-1100

TO
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEEPING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A6132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	AG
17228		A2
17229		A2
17230		C2
17231		BG
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ | CL II ENGRG CHG | ✓ | CL I ENGRG CHG | LCD19-1242 | 2 C

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 4/4/67 (R)

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R	(46)

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: NOT REWORK; SCRAP
APPROVED BY: DATE 3/28/67; 5; VCI; SUPPORT; RELIAB GROUP
GROUP LEADER 3/15/67; STRESS GROUP 3/14/67; LIAISON ENGRG 3-30-67; PROJ ENGRG 4/4/67

PRIORITY C
DRAWING TITLE: NOTED
DRAWING NO. LEO280
EO NO. 541

ISSUED BY G. BECKER/J. STRAKOSCH X1153 SECTION YDI GROUP NO. 335 PL 25

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LE0280 | EO NO. 626

CONTROL INFO NO. LDW280A7168

ENG 32.2 REV 3-65

REVISE N/A FOR NOTED EFF AS SHOWN. QUANTITIES REMAIN THE SAME

DWG No *	EFF	N/A	WAS**	CH.LTR.	TITLE
LDW280-17189-11 -11	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R (46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B3	SEE DWG
LDW280-17228 -11 THRU -18 -11 THRU -18	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53523 LDW280-54523	LDW280-23523 LDW280-23523	A3	
LDW280-17229 -11 THRU -18 -11 THRU -18	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53523 LDW280-54523	LDW280-23523 LDW280-23523	A3	
LDW280-17230 -11,-19,-21 & -23 -11,-19,-21 & -23	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53523 LDW280-54523	LDW280-23523 LDW280-23523	C5	
LDW280-17231-19 -19	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B7	
LDW280-17233 -30,-31,-33,-34,-35 & -37 -30,-31,-33,-34,-35 & -37 -29,-32,-33,-34,-36 & -38 -29,-32,-33,-34,-36 & -38	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46) LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520 LDW280-53521 LDW280-54521	LDW280-52520 LDW280-52520 LDW280-23521 LDW280-23521	D3	
LDW280-17234 -13,-14,-17,-19 & -21 -13,-14,-17,-19 & -21	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B3	
LDW280-17235-13 & -14 -13 & -14	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B3	
LDW280-17306-13 -13	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280 53521 LDW280-54521	LDW280-23521 LDW280-23521	B4	
LDW280-17310 -11,-13,-14,-15,-17 & -19 -11,-13,-14,-15,-17 & -19	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520	LDW280-52520 LDW280-52520	B3	
LDW280-17330 -32,-34,-36 & -38 -32,-34,-36 & -38 -31,-33,-35 & -37 -31,-33,-35 & -37	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46) LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520 LDW280-53521 LDW280-54521	LDW280-52520 LDW280-52520 LDW280-23521 LDW280-23521	D4	
LDW280-17348-13 & -15 -13 & -15	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	C3	
LDW280-17431 -15,-17 & -19 -15,-17 & -19	LM-3(33) LM-4(34) THRU LM-15(15) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B5	
LDW280-17437 -11,-13 & -15 -11,-13 & -15 -14,-16 & -18 -14,-16 & -18	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46) LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520 LDW280-53521 LDW280-54521	LDW280-52520 LDW280-52520 LDW280-23521 LDW280-23521	A6	
LDW280-17438 -11,-13 & -15 -11,-13 & -15	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	A3	SEE DWG

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	LCD-1533
		V	

REASON FOR EO: REINFORCE UPPER DECKS

DESCRIPTION OF EO: ON *, N/A WAS **

GAEC EO RELEASE: JK 6/6/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU LTA-3 D/R(46)	LM-15(45)

DRAWING CHANGE REQD: REVISE DWG V; RECORD EO

DISPOSITION OF PARTS: HOT REWORK; REQD SCRAP 5

APPROVED BY / DATE: VDI 6/9/67; SUPPORT 6/8 WH 6/21/67; RELIAB. GROUP 6/21/67; GROUP LEADER Sam 6/21/67; STRESS GROUP 6/21/67; LIAISON ENGRG 6/21/67; PROJ ENGRG 6/20; SCHT

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LE0280

EO NO.: 626

ISSUED BY G. ZEMAN/J. STRAHOSCH SECTION VDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO 280 | EO NO. 826
CONTROL INFO NO. LDW280B0881

FOR THE FOLLOWING DWGS, ADD LFM420-2370-003, LDW420-2370 SER#1 EFF ; AND ADD N/A LDW 420-2386

DWG NO. *	DASH NOS.	NO. REQD	NEXT ASSY	CHANGE NO.	TITLE
LDW280-54520	-11	1	LDW420-2386	A7	SEE DWG
LDW280-54521	-13	1	LDW420-2386	A10	
LDW280-54522	-15	1	LDW420-2386	B2	
LDW280-54523	-11	1	LDW420-2386	A6	
LDW280-51560	-9	1	LDW420-2386	C3	

FOR THE FOLLOWING DWGS, ADD LFM 420-2370-003, LDW420-2370 SER#1 EFF. QTY AND NEXT ASSY REMAIN THE SAME.

DWG NO. *	DASH NOS.	CHANGE NO.	TITLE
LDW280-17120	-25	D3	SEE DWG
-17121	-37	D6	
-17122	-29-33	E10	
-17123	-23	C9	
-17228	-11-12-13-14-15-16-17-18	A6	
-17229	-11-12-13-14-15-16-17-18	A6	
-17230	-11-19-21-23	C9	
-17233	-29-30-31-32-33-34-35-36-37-38	D4	
-17234	-13-14-17-19-21-23	B4	
-17310	-11-13-14-15-17-19	B4	
-17330	-31-32-33-34-35-36-37-38	D5	
-17431	-15-17-19	B6	
-17437	-13-14-15-16-17-18	A7	
-17438	-11-13-15	A4	
-17440	-11-13-15	B4	
-17604	-15-17	A5	
-17605	-15-17	A5	
-17606	-23-25	B6	
-17841	-13-19-21-23	A10	
-17842	-11-12-13-14	B5	
-17843	-13-15	A6	
-17845	-11-13-15	A4	
-17846	-11-12-13-14-15-16-17-18-19	A4	
-17850	-17-19-21	B6	
-17981	-11-15	B4	
-18111	-15	B6	
-18301	-33	A6	
LDW280P17497	-9	A5	

TOP

NAS 9-1100

FITH

LFM

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LCD 1244

REASON FOR EO: F.I.T.H. TEST

DESCRIPTION OF EO: ON *, ADDED LFM420-2370-003, LDW420-2370 EFF. ON LDW280-54520-11, LDW280-54521-13, LDW280-54522-15, LDW280-54523-11, LDW280-51560-9 ADDED NEXT ASSY LDW 420-2386

GAEC EO RELEASE: 30 (5) C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM420	-2370-003	
LM	LDW420	-2370	SER#1

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: NOT REQD REWORK | SCRAP

PRIORITY: C

DRAWING TITLE: NOTED

	APPROVED BY	DATE
PROJ ENGRG	[illegible]	12/28/67
LIAISON ENGRG	[illegible]	12/28/67
STRESS GROUP	PAT [illegible]	12/2/67
GROUP LEADER	[illegible]	12/2/67
RELIAB. GROUP		
SUPPORT	VOI	

DRAWING NO.: LEO280

EO NO.: 826

01-15-67 ISSUED BY ROESSLER / THORJUSEN X1153 SECTION VOI GROUP NO. 335 PL. 25

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO.	LEO 280		EO NO. 1217
CONTROL INFO NO.	LDW280B6103		

FOR THE FOLLOWING DRAWINGS & DASH Nº's, REVISE QUANTITY REQ'D AS FOLLOWS FOR SER #1 EFF.; N/A TO REMAIN THE SAME:

DRAWING NO.	* DASH NO.	QUANTITY ● (WAS)	QUANTITY △ (IS)	CHG. LTR.	TITLE
LDW280-17121	-37	1	2	D7	SEE DWG.
LDW280-17234	-23	1	2	B5	
	-21	1	2		
	-19	1	2		
	-17	1	2		
	-14	1	2		
	-13	1	2		
LDW280-17233	-29	1	2	D5	
	-30	1	2		
	-31	1	2		
	-32	1	2		
	-33	2	4		
	-34	2	4		
	-35	1	2		
	-36	1	2		
	-37	1	2		
	-38	1	2		
LDW280-17850	-17	2	4	B7	
LDW280-17438	-11	1	2	A5	
	-13	1	2		
	-15	1	2		
LDW280-17437	-13	1	2	A8	
	-14	1	2		
	-15	1	2		
	-16	1	2		
	-17	1	2		
	-18	1	2		
LDW280-17431	-15	1	2	B7	
	-17	1	2		
	-19	1	2		
LDW280-17330	-31	1	2	D6	
	-32	1	2		
	-33	1	2		
	-34	1	2		
	-35	1	2		
	-36	1	2		
	-37	1	2		
	-38	1	2		
LDW280-17440	-11	1	2	B5	
	-13	1	2		
	-15	1	2		
LDW280-17310	-11	1	2	B5	
	-13	1	2		
	-14	1	2		
	-15	1	2		
	-17	1	2		
	-19	1	2		
LDW280-17120	-25	1	2	D4	
LDW280-17981	-11	1	2	B7	
	-15	1	2		
LDW280-17841	-13	1	2	B1	
	-19	1	2		
	-21	1	2		
	-23	1	2		

LFM

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 3504 PKG. #1

REASON FOR EO: ADDT'L DECK HARDWARE REQ'D FOR FITH TESTING

DESCRIPTION OF EO: FOR *, CHANGED QUANTITY FROM ● TO △

GAEC EO RELEASE: VC 11/12/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LDW	420-2370		
LFM	420-2370	007	SERIAL #1

DRAWING CHANGE REQ'D: ✓ REVISE DWG; RECORD EO
DISPOSITION OF PARTS: NOT REWORK; REQD SCRAP
PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 1217

APPROVED BY								
DATE	11/7/68	11/6/68	11/8/68	11/7/68	11/6/68		11/8/68	11-13-68
	VDI	SUPPORT	PROJ CLOSE GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GAEC

CDR 11/15/68 ISSUED BY JOE LUCCHESI / G. ZEMAN ×86046 SECTION V.D.T. GROUP NO. 335 PL 25

TO NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 1374
CONTROL INFO NO. LDW280B7394

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17323 ✓	B3	SEE DWG
-17327 ✓	B4	
-17330 ✓	E1	
-17337	D1	
-17341	E1	
-17343	C3	
-17344	B3	
-17347	B3	
-17348	C4	
LDW280-17349	C1	SEE DWG

* APPLICABLE DASH NOS

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. 8 CCA 1821 (5)

REASON FOR EO: LM-15(45) NO LONGER REQD
DESCRIPTION OF EO: DELETED LM-15(45) EFF. FROM -*

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK | SCRAP ✓
APPROVED BY: VDI | SUPPORT | RELIAB GROUP | GROUP ENGR | STRESS GROUP | LIAISON ENGR | PROJ | DATE: 4-24-69 | 4-24-69 | 4/9/69

PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO 280
EO NO.: 1374

#52869 ISSUED BY MEVORAH / THORJUSEN X86016 SECTION VEH DES INT GROUP NO. 335 A 25

01
NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO-280 | EO NO. 1667
CONTROL INFO NO. LDW280B7663

REMOVE LM-10(40) THRU LM-14(44) EFFECTIVITY FROM ALL DASH NOS.* FOR THE NOTED N/A*-*.

DWG. NO.*	N/A *-*	DWG. TITLE	CHG. NO.
LDW280-17120	LDW280-54520	SEE DWG.	D6
-17121	-54521		E3
-17122	-54522		F2
-17233	-54520		D7
	-54521		
-17234	-54521		C2
-17235	-54521		B5
-17310	-54520		C2
-17330	-54520		E2
	-54521		
-17431	-54521		C2
LDW280-17437	-54520	SEE DWG.	B1
	LDW280-54521		

NAS 9-1100

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKGS 50 #51 #52

REASON FOR EO: REDESIGN OF UPPER DECKS FOR EXTENDED PROP. TANKS

DESCRIPTION OF EO: FOR (*) REMOVED LM-10(40) THRU LM-14(44) EFF. FOR N/A *-*

GAEC EO RELEASE: 9-16-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10(40)	
		THRU	
		LM-14 (44)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK | SCRAP ✓

APPROVED BY / DATE: VDI 9/16/69 | SUPPORT | RELIAB GROUP 9/16/69 | GROUP LEADER | STRESS GROUP 9/16/69 | LIAISON ENGRG | PROJ ENGRG 9/16/69 | GOVT

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO 280

EO NO.: 1667

ISSUED BY 9-10-69 L. KRAVITZ/THORJUSEN *87222 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

LEM	LDW280-51537	LEM-1(31)	2 EA	LEM	LDW280-25533	LEM-1(31)	2 EA	LEM	LDW280-25533	LEM-1(31)	1 EA
LEM	LDW280-25537	LTA-8(18)	2 EA	LEM	LDW280-25533	LTA-8(18)	2 EA	LEM	LDW280-25533	LTA-8(18)	1 EA
LEM	LDW280-25537	LTA-5(15)	2 EA	LEM	LDW280-25533	LTA-5(15)	2 EA	LEM	LDW280-25533	LTA-5(15)	1 EA
LEM	LDW280-25534	LEM-1(31)	2 EA	LEM	LDW280-25531	LEM-1(31)	2 EA	LEM	LDW280-25531	LEM-1(31)	1 EA
LEM	LDW280-25534	LTA-8(18)	2EA	LEM	LDW280-25531	LTA-8(18)	2 EA	LEM	LDW280-25531	LTA-8(18)	1 EA
LEM	LDW280-25534	LTA-5(15)	2EA	LEM	LDW280-25531	LTA-5(15)	2 EA	LEM	LDW280-25531	LTA-5(15)	1 EA

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17331-17&-19		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17331-11		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17331-13&-15		GAEC SCH NO. 51-4	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1	1.10	2	3						
REV	A	A								
SHEET										
REV										
SHEET										
REV										

		GRUMMAN REF INFO A	
LAST SECT LTR USED		PRIM NO.	LE(001)
LAST DASH NO. USED	-15	207	PD10

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 LINE ITEM NO. 1 DOCUMENTATION TYPE II

DRAWN BY	SPERLING 8-18-65	RELIABILITY	
LAYOUT BY	A. Richer 10/14/65		
CHECKED BY	JL 8-25		
GROUP LDR			
VEH. DES. INT.			
STRUCTURES	M.M. Pet 11-20	PROJ ENGR	10/23
STRUCTURES	Hutterman 10-21	REL GROUP	10/25
WIEGHTS	W.B. Mauldin 10/28		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

PLATE
DESCENT STAGE-FWD & AFT INT.
SUPT-CAPSTRIP DIAG STRUT SPLICE

SIZE	CODE IDENT NO.		
B	26512	LDW280-17331	A

SCALE NONE SHEET 1 OF 4

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1 & 1.10					✓	LEO280-73	ON -17 & -19 N/A FOR LEM-1 WAS LDW280-25537. SH 1 OF 4 WAS SH 1 OF 3. ADDED SH 1.10.	LEM-1 (31)	NOT	REQD	ANGELLO 5-13-66		X

FOR CONTINUATION OF REVISIONS SEE SHEET _____

ENG 77.3 5-66

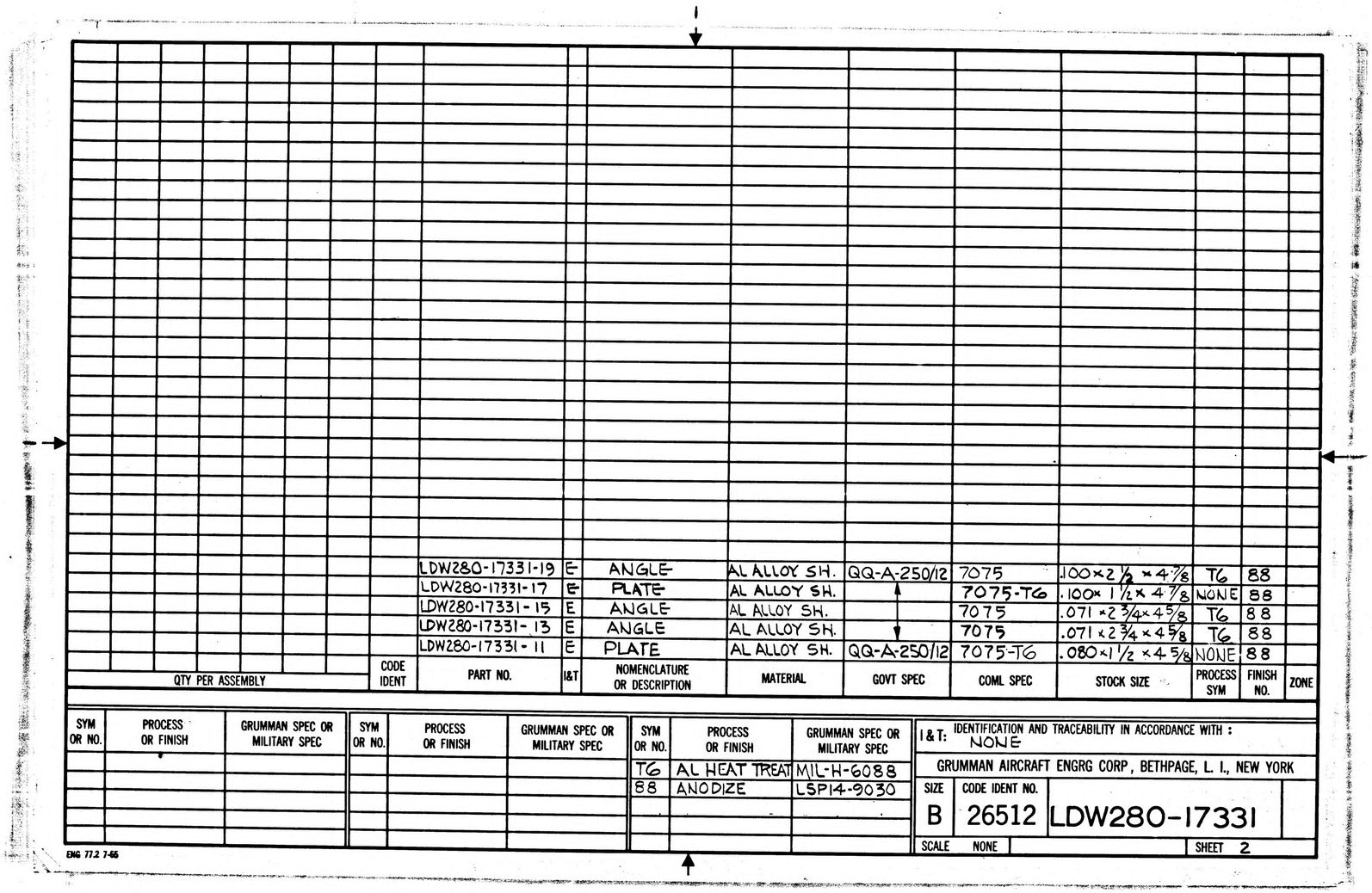
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17331	A

SCALE NONE | SHEET 1.10

01

NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17331-19	E	ANGLE	AL ALLOY SH.	QQ-A-250/12	7075	.100×2 1/2×4 7/8	T6	88	
		LDW280-17331-17	E	PLATE	AL ALLOY SH.	↑	7075-T6	.100×1 1/2×4 7/8	NONE	88	
		LDW280-17331-15	E	ANGLE	AL ALLOY SH.	↕	7075	.071×2 3/4×4 5/8	T6	88	
		LDW280-17331-13	E	ANGLE	AL ALLOY SH.	↓	7075	.071×2 3/4×4 5/8	T6	88	
		LDW280-17331-11	E	PLATE	AL ALLOY SH.	QQ-A-250/12	7075-T6	.080×1 1/2×4 5/8	NONE	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17331

SCALE NONE SHEET 2

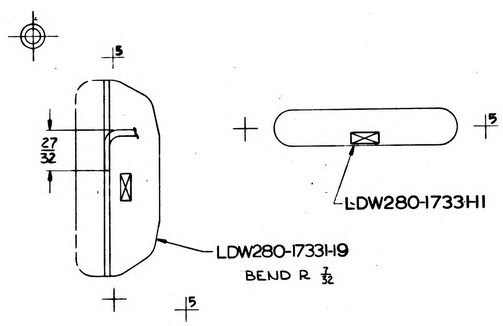
ENG 77.2 7-65

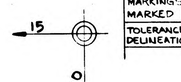
01

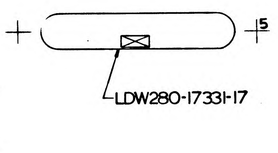
NAS 9-1100

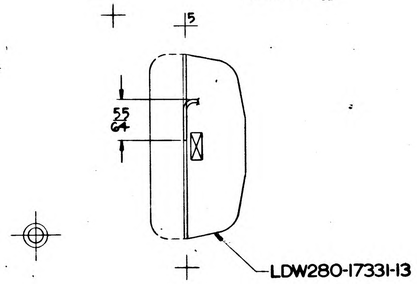
NOTE:
(1) NO TOOLING HOLES PERMITTED IN PARTS.

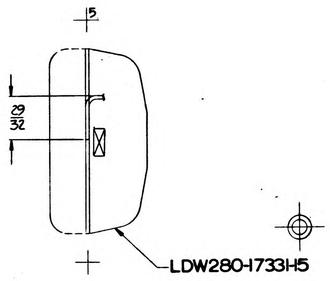
MANUFACTURING OPERATIONS NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠	✓
TOLERANCE ON ALL LOFTED DELINEATIONS IS ± 1/32	✓











GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	LDW280-17331
C	26512	

LEM — MODEL OR END ITEM — SCALE FULL — SHEET 3

ENG 73-2 644

FOR PHOTO REPRODUCTION

LDW280-17331

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 73
CONTROL INFO NO. LDW 280-5400

ENG 32.2 REV 3-65

FOR THE NOTED PART NOS., N/A FOR LEM-1 NOW LDW 280-51537
(WAS LDW 280-25537)

NAS 9-1100

LDW280-17155 *16	CLIP	B1
*15		
*14		
*13		
*12		
LDW280-17159 *11	CLIP	
LDW280-17158 *24	ANGLE	B2
LDW280-17158 *22		
LDW280-17157 *26		C1
*24		
*22		
*20		
LDW280-17157 *18		
LDW280-17156 *28		B1
*26		
*24		
*22		
LDW280-17156 *20		
LDW280-17155 *26		B1
*24		
*22		
LDW280-17155 *20	ANGLE	
LDW280-17137 *15	WEB	C1

CHG NO.

LDW280-17278 *20	CLIP	A1
LDW280-17278 *11	SUPPORT	
LDW280-17277 *17	ANGLE	B1
*15		
*13		
LDW280-17277 *11	ANGLE	
LDW280-17221 *13	ANGLE	A1
LDW280-17213 *11	ANGLE	A1
LDW280-17192 *15	DOUBLER	A3
LDW280-17164 *11	TEE CLIP	A1
LDW280-17163 *13	ANGLE	A1
LDW280-17163 *11	ANGLE	
LDW280-17162 *17	DOUBLER	B1
*15	DOUBLER	
*13	SHIM	
LDW280-17162 *11	SHIM	
LDW280-17161 *19	ZEE	B1
LDW280-17161 *16	ZEE	
LDW280-17161 *17	ZEE	
LDW280-17160 *14	STIFFENER	A2
LDW280-17160 *12	STIFFENER	

CHG NO.

LDW280M17229 *3	TEE	B2
LDW280M17229 *5	TEE	B1
LDW280M17227 *3	ANGLE	B1
LDW280M17227 *1	ANGLE	
LDW280M17135 *1	ANGLE	C1
LDW280M17114 *1	CAPSTRIP	B1
LDW280M17100 *1	CAPSTRIP	B2
LDW280-17400 *11	CLIP	A1
LDW280-17354 *14	ANGLE	A1
LDW280-17354 *12	ANGLE	
LDW280-17341 *21	DOUBLER	B1
LDW280-17331 *13	ANGLE	A1
LDW280-17331 *11	PLATE	

CHG NO.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG ✓	

REASON FOR EO: DESIGN CHANGE FOR LEM-1

DESCRIPTION OF EO: ON * N/A FOR LEM-1 WAS LDW 280-25537

S&A EO RELEASE: MPTO AE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-1 (31)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: NOT REQ'D | REWORK | SCRAP

PRIORITY: C

DRAWING TITLE: NOTED

APPROVED BY							
	[illegible]	[illegible]		[illegible]	—	[illegible]	[illegible]
DATE	3/9/66	3/11/66		3/3/66	—	3/9/66	3/14/66
	VDI	SUPPORT WELDING	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

DRAWING NO. LEO 280

EO NO. 73

ISSUED BY A. RICHER K1153 / J. STRAKOSCH SECTION VDI GROUP NO. 280 PL

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO280		EO NO. 161
CONTROL INFO NO. LDW280-7917		

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED* RESTRICT N/A LDW280-25531 TO LTA-5(15) ONLY
ADD N/A LDW280-28531 FOR LTA-8(18) & LEM-1(31)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17131-11	B5	WEB
-17164-11	A4	CLIP
-17191-11	B2	STIFFENER
-17191-12		STIFFENER
-17192-17	B2	DOUBLER
-17193-11 thru -15	A4	ZEE
-17193-17		ZEE
-17194-11 thru -23	A3	ANGLE
-17194-25		ANGLE
-17195-21 thru -27	C3	ANGLE
-17195-29		ANGLE
-17201-13	A3	STIFFENER
-17253-11 thru -13	A2	ANGLE
-17253-15		ANGLE
-17254-11 thru -15	B3	ANGLE
-17254-17		ANGLE
-17254-19		ANGLE
-17277-11 thru -15	C1	ANGLE
LDW280-17277-17		ANGLE

DRAWING #	CHANGE #	TITLE
LDW280-17278-15	C2	ZEE
-17278-19		CLIP
-17331-11	A2	PLATE
-17331-13		ANGLE
-17331-15		ANGLE
-17341-13	C2	DOUBLER
-17345-11	B2	ANGLE
-17346-17 thru -27	B1	ANGLE
-17346-28		ANGLE
-17349-11	B2	PLATE
-17400-11	B2	DOUBLER
-17409-11	A1	CLIP
LDW280-17409-13		DOUBLER
LDW280-17443-17	A5	DOUBLER
LDW280M17108-4	D1	STIFFENER
M17138-5	D1	CAP STRIP
M17154-1	B1	ANGLE
M17186-1	A3	SUPPORT
M17226-1	B1	ANGLE
M17226-3		ANGLE
M17228-8	C2	SUPPORT
M17229-8	C3	SUPPORT
M17260-1	A2	ANGLE
LDW280M17295-1	A4	SUPPORT

* USE APPLICABLE DASH No IN DESCRIP OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	

REASON FOR EO: ADDITION OF AMBIENT He TANK

FOR-*

DESCRIPTION OF EO: N/A WAS LDW280-25531 EFF LTA-5,8 & LEM-1
ADDED N/A LDW280-28531 FOR LTA-8 & LEM-1

GAEC EO RELEASE (R): LE 7/13/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	
LEM		LEM 1(31)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: NOT REQ'D; REWORK; SCRAP

APPROVED BY						
DATE						
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG	QUALITY
				w/LE				
				6/13/66				
							Ball 7-2-66	

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 161

1 Backfill / T. STRAKOSCH SECTION VEHICLE DESIGN GROUP NO. 335 PL 35

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17336-15 & -13	LEM	GAEC SCH NO. 50-3	(3)
	LDW280-25580	VERIFICATION TEST (70)	3 EA
	LDW280-25580	QUALIFICATION TEST (72)	3 EA
	LDW280-25580	LEM-1(31)	1 EA
	LDW280-25580	LTA-8(18)	1 EA
	LDW28J-25580	LTA-5(15)	1 EA

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1	1.10	2	3						
REV	A	A	A	A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED		GRUMMAN REL INFO
LAST DASH NO. USED	-15	PRIM NO. LE(001) 207 AP12

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 LINE ITEM # 1 DOCUMENTATION TYPE II

DRAWN BY	HERB. SCHWETER 11/17/65	RELIABILITY	
LAYOUT BY	ROBERT CLARK 12-7-65		
CHECKED BY	FL eahw 12-4-65		
GR. LEADER	12/16/65		
YEH DES INT	12/16/65		
STRUCTURES	FEB 12/16/65	PROJ ENGR	12/16/65
STRUCTURES	12-11	REL GROUP	12.16.65
WEIGHTS	Andrus 12-14		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

TUBE
DESCENT STAGE SUPER CRITICAL
He TANK TRUSS SPT

SIZE	CODE IDENT NO.	
B	26512	LDW280-17336 A

SCALE NONE SHEET 1 OF 4

ENG 77.1 9-64

SWIP

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10, 2.00, 3.00						E.O. A1	IN F/D & B/M ADDED -15 REMOVED -11 SHEET 1.00 OF 4 WAS 1.00 OF 3 ADDED SHEET 1.10.	LTA-1,-5,-8 VER.T'ST (70) QUAL.T'ST (72)		-11	FOSTER 6-8-66 JB		

CHG APPROVED	LTR	GROUP LDR	V. D. I.	STRUCT	STRUCT	WEIGHTS
	A					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

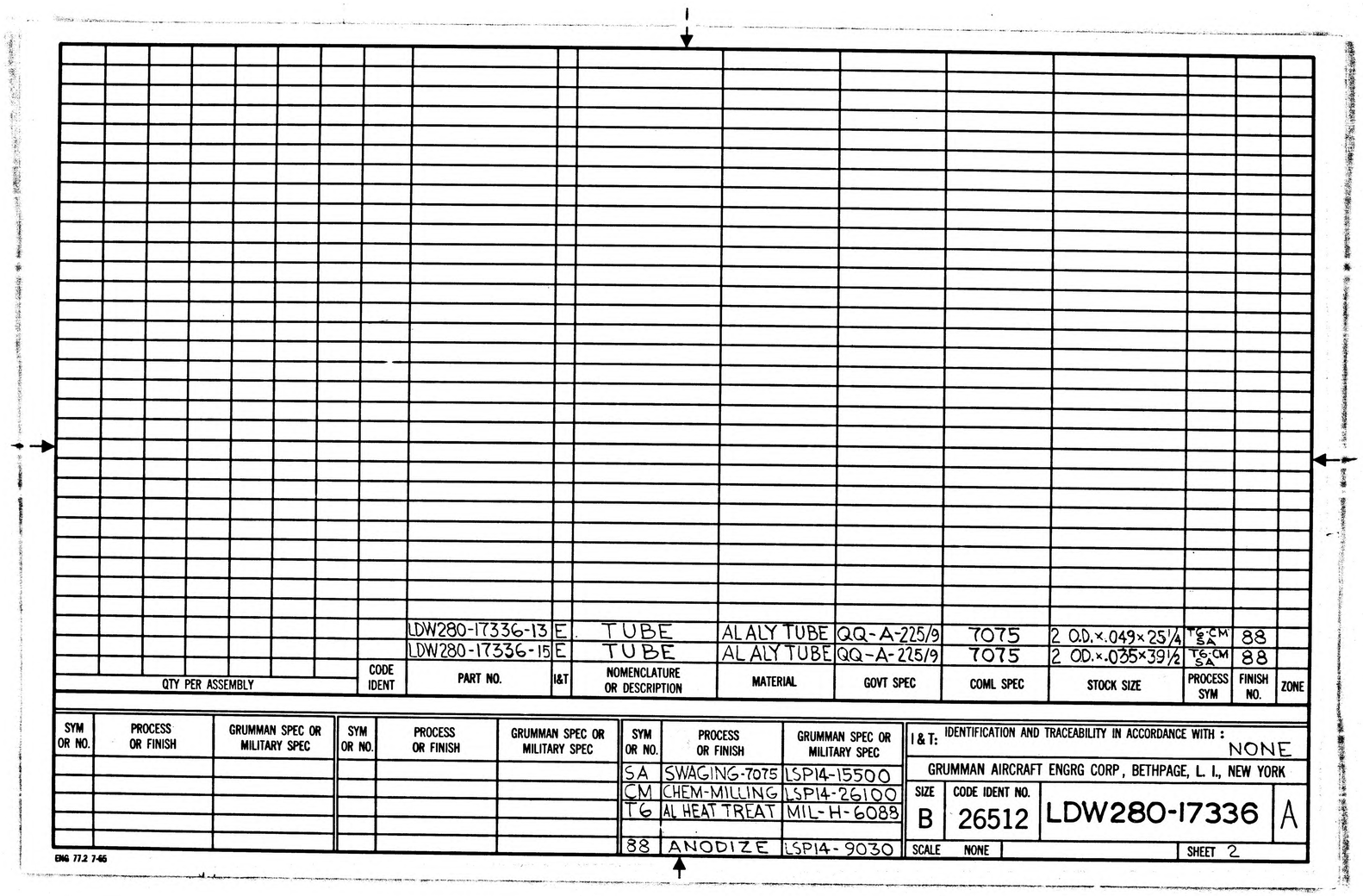
SIZE	CODE IDENT NO.		
B	26512	LDW280-17336	A

SCALE NONE SHEET 1.10

GNG 77.16 3-65

01

NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17336-13	E	TUBE	AL ALY TUBE	QQ-A-225/9	7075	2 O.D. x .049 x 25 1/4	T6 CM SA	88	
		LDW280-17336-15	E	TUBE	AL ALY TUBE	QQ-A-225/9	7075	2 O.D. x .035 x 39 1/2	T6 CM SA	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
SA	SWAGING-7075	LSP14-15500
CM	CHEM-MILLING	LSP14-26100
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17336	A

SCALE NONE SHEET 2

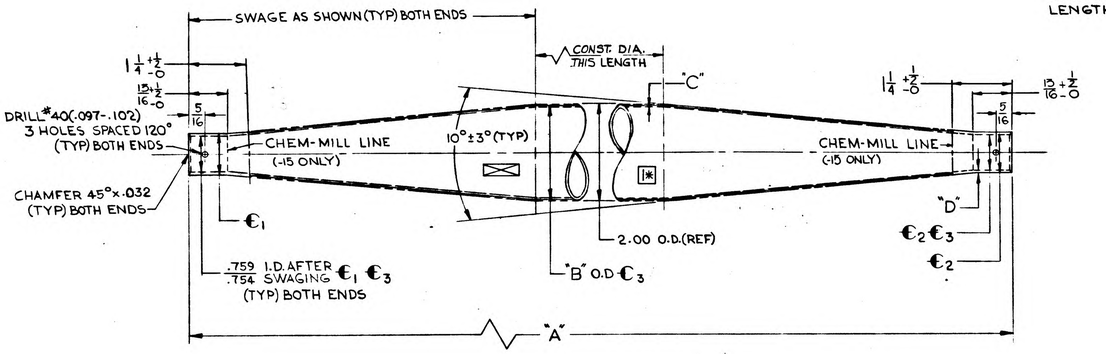
ENG 77.2 7-65

01

NAS 9-1100

NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. CHEM MILL DEPTH REQUIRED TO ARRIVE AT "C" DIM IN CONSTANT DIA AREA TO BE MAINTAINED FOR ENTIRE CHEM MILLED LENGTH.



TABLE

PART NO.	A LENGTH	B O.D.	C WALL THICKNESS AFTER CM CONST DIA AREA	D WALL THICKNESS BOTH ENDS AFTER SWAGING	
LDW280-17336-15	$36\frac{29}{64} \pm \frac{1}{32}$ /	2.000 ✓	.020 / .016	.046	
-13	$22\frac{11}{64} \pm \frac{1}{32}$ /	1.942 ✓	.022 ✓ .018	.062 -	

LDW280-17336-15

CHEM-MILL LINE TOLERANCE: ±1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ±1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040

SYMBOL	THICKNESS AFTER CHEM-MILLING	*DEPTH OF CUT
1*	SEE "C" DIM & NOTE #2	.017 (REF)

LDW280-17336-13

CHEM-MILL LINE TOLERANCE: ±1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ±1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040

SYMBOL	THICKNESS AFTER CHEM-MILLING	*DEPTH OF CUT
1*	SEE "C" DIM & NOTE #2	.029 (REF)

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭	√
FILLET AND INSIDE CORNER RADII TOLERANCES .010R TO .062R ± .010; .063R TO .250R ± .015; OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING $\mathbb{C}_1$ = .010 $\mathbb{C}_2$ = .010 $\mathbb{C}_3$ = .030	√
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .003 MIN. TO .005 MAX. MIN. THICKNESS TO BE .002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ✓ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS	

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
D	26512	LDW280-17336 A

LEM — MODEL OR END ITEM — SCALE FULL — SHEET 3

LDW280-17336 A

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO280- | EO NO. 267
CONTROL INFO NO. LM-3-3806

ON THE FOLLOWING PART NUMBERS INCREASE TOLERANCE OF THICKNESS AFTER CHEM-MILL

PART NUMBER *	REVISED THICKNESS	ORIG. THICKNESS	E.O. CHANGE
LDW280-10929-11-12	.016 - .022	.016 - .019	C1
LDW280-17259-19	.020 - .026	.020 - .024	B1
LDW280-17336-13	.018 - .024	.018 - .022	
-15	.016 - .022	.016 - .020	B1
LDW280-17337-11	.018 - .024	.018 - .022	
-13	.019 - .025	.019 - .023	
-15	.018 - .024	.018 - .022	
-17	.017 - .023	.017 - .021	B2
LDW280-17395-31	.019 - .025	.019 - .023	
-37	.019 - .025	.019 - .023	C1
LDW280-17683-19	.017 - .023	.017 - .021	A2
LDW280-17686-15	.021 - .027	.021 - .025	
-17	.016 - .022	.016 - .020	B1
LDW280-17943-19	.016 - .022	.016 - .020	A2

* USE APPLICABLE DASH NO. IN DESCRIP OF EO

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | 3

REASON FOR EO: INCREASE CHEM-MILL TOLERANCE TO MORE NEARLY AGREE WITH PERMISSIBLE WALL THICKNESS VARIATION. REF. LAV280-251A

DESCRIPTION OF EO: FOR * CHEM-MILL TOLERANCE +.006 -.000 WAS +.004 -.000

GAEC EO RELEASE

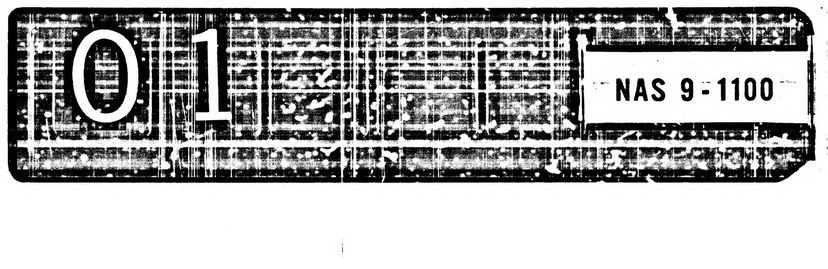
MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK | SCRAP (NOT REQD)

APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
	9/8				BM		
9-13-66 VDI					9-14-66	9-14-66	9-21-66

PRIORITY: E | DRAWING TITLE: SEE DRAWING | DRAWING NO.: LEO280- | EO NO.: 267

ISSUED BY LIAISON / VIC BOLLO x2151 SECTION VDI GROUP NO. 335 PL 35



LEM	LDW280-23580	LEM-15(45)	1 EA
		THRU	
LEM	LDW280-23580	LEM-6(36)	1 EA

PART NO. LDW280-17337-35-37

LEM	LDW280-23580	LTA-3D/R(46)	1 EA
LEM	LDW280-23580	LEM-15(45)	1 EA
		THRU	
LEM	LDW280-23580	LEM-1(31)	1 EA

PART NO. LDW280-17337-25-27

LEM	LDW280-25580	VERIFICATION TEST (70)	3
LEM	LDW280-25580	QUALIFICATION TEST (72)	3

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17337-19	GAEC SCH NO.		

LEM	LDW280-23580	LEM-5(35)	1 EA
LEM	LDW280-23580	LTA-3(13)	1 EA

PART NO. LDW280-17337-29,-31

LEM	LDW280-23580	LTA-3D/R(46)	1 EA
LEM	LDW280-23580	LEM-4(34)	1 EA
LEM	LDW280-23580	LEM-3(33)	1 EA
LEM	LDW280-23580	LEM-2(32)	1 EA
LEM	LDW280-25580	VERIF TEST (70)	3 EA
	LDW280-25580	QUAL TEST (72)	3 EA
	LDW280-25580	LEM-1(31)	1 EA
	LDW280-25580	LTA-8(18)	1 EA
LEM	LDW280-25580	LTA-5(15)	1 EA

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17337-15-17	GAEC SCH NO.		

LEM	LDW280-23580	LTA-3	1 EA

PART NO. LDW280-17337-33

LEM	LDW280-25580	VERIF TEST (70)	3 EA
		QUAL TEST (72)	3 EA
		LTA-8(18)	1 EA
LEM	LDW280-25580	LTA-5(15)	1 EA

PART NO. LDW280-17337-13

LEM	LDW280-25580	VERIF TEST (70)	3 EA
LEM	LDW280-25580	QUAL TEST (72)	3 EA
LEM	LDW280-25580	LTA-8(18)	1 EA
LEM	LDW280-25580	LTA-5(15)	1 EA

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17337-11,	GAEC SCH NO. 50-3		

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1	1.10	2	3						
REV	B	B	B	B						
SHEET	1.00	1.10	1.11	2.00	2.10	3.00				
REV	C	C	C	C	C	C				
SHEET										
REV										

LAST SECT LTR USED	
LAST DASH NO. USED	-37

GRUMMAN REL INFO C

PRIM NO.	DK(001)		ENIT
207	MP-1C	9/11/67	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS — DECIMALS — ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS9-1100 LINE ITEM # 1 DOCUMENTATION TYPE II

DRAWN BY	HERB. SCHWETER 11/9/65	RELEASED	
LAYOUT BY	ROBERT CLARK 12-7-65		
CHECKED BY	EG 12-4-65		
GR LEADER	12/6/65		
VEH DES INT	12/7/65		
STRUCTURES	DSK FLD 12/6/65		
STRUCTURES	12-11	PROJ ENGR	12/16/65
WEIGHTS	12/8	REL GR	12/16/65

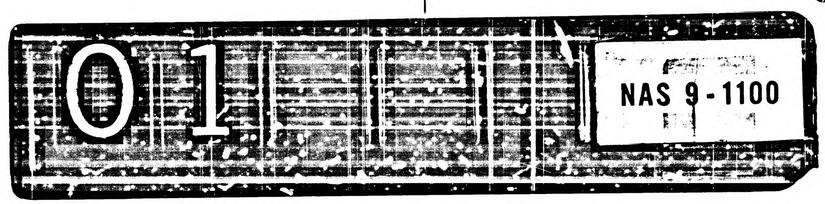
GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

TUBE
DESCENT STAGE SUPER CRITICAL He TANK TRUSS SPT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17337	C

SCALE NONE SHEET 1.00 OF 6

ENG 77.1 9-64



REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1, 1.10						E.O. A1	ADDED SH 1.10 SH 1.00 OF 4 WAS SH 1.00 OF 3 IN MODEL BLOCK ADDED LTA-3 (13), LEM-2 (32), LEM-3 (33), LEM-4 (34), LEM-5 (35), LEM-6 (36) TO -13, -15, -17 EFFECTIVITY N/A LDW280-23580.	LTA-3 & LEM-2 THRU -6	NOT	REQD S.J.	T. MAYBO 7-13-66		
B	1	1, 1.10 2, 3						E.O. B1	IN F/D & B/M ADDED -19 & NOTE 3	VERIFICATION TEST (70) QUALIFICATION TEST (72)	NOT	REQD	SWENSON 9-10-66 S.J.		
	2	1.10, 3						LE0280-267	FOR LDW280-17337-11, -13, -15, & -17 CHEM-MILL TOLERANCE ±.006 WAS ±.004 ±.000 WAS ±.000.	NOT REQD	NOT	REQ'D H.B.	KORDES 9-28-66		
	3	1.00 & 1.10						LE0280-301 (E)	FOR -13, -15 & 17 ADDED LEM-7 THRU LEM-15 EFFECTIVITY	LEM-7 THRU -15	NOT	REQD F.H.	WISBET 10-21-66		
									RETRACED SH 3.00 NO CHG - LAST REV B - SH SIZE E WAS D	WILLIAMS	9-12-68				
C	1	1.00-1.10						E.O. C1	IN F/D & B/M ADDED -21 REMOVED LM-1 EFF FROM -11	LM-1 (31)		-11			
	2	1.00 1.10						E.O. C2	IN MOD BLK -25 & -27 ADDED LM-1 & N/A TO LDW280-25580 -13 & 21 REMOVED LM-1 EFF ADDED SH. 2.01	LM-1 (31)		-13-21			
	3	1.00 1.10 2.10 3.00					✓	E.O. C3	REMOVED -13 FROM LM-2 (32) THRU LM-15 (45) EFF, CREATED -25 & -27 N/A LDW280-23580 LM-2 (32) THRU LM-15 (45) (1 EA REQ'D/MOD)	LM-2 (32) THRU LM-15 (45)		- 13			
	4	3.00 1.10						E.O. C4	FOR -25 & -27 ADDED (6) DRILL # 40 HOLES, REMOVED DRILL #40 3 HOLES SPACED 120° (TYP BOTH ENDS)	LM-1 (31) THRU LM-15 (45)	✓				
	5	1.00 3.00					✓	LE0280-541 LCD 1242	IN B/M FOR -15 -17 -25 & 27 ADDED LTA 3 D R EFF	LTA-3 D R (46)	NOT	REQD			
	6	1.00 1.10 2.00 2.10 3.00		B			✓	E.O. C6 LCD 2459	ADDED -29 & -31 & NOTES 4 & 5, (-29 & -31 MAY MADE BY HEAT TREATING -15 & -17,) REMOVED LTA-3, LM-5 THRU-LM-15 FROM -15 & -17 EFF	LTA-3 (13) LM-5 (35) THRU LM-15 (45)	NOTED				
	7	1.00 1.10 2.00 2.10 3.00					✓	E.O. C7 LCD 2459	ADDED -33 & REMOVED -13 FOR LTA-3 EFF (-33 MAY BE MADE BY REHEAT TREATING -13	LTA-3 (13)	NOTED		E. WILLIAMS 9-12-68 H.D.		

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS
	C					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17337	C ©

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	8	1.00 1.10 2.00 2.10 3.00		B		✓		E.O. C8 LCD 2459 (4)	ADDED -35 -37 & NOTES 6 & 7. FOR -29 & -31 REMOVED EFF. LM-6 THRU LM-15 (REF E.O. C6) FOR NOTES 4 & 5, ADDED (FOR -29 & 31 ONLY) (-35 & 37 MAY BE MADE BY REWORKING -29 & -31 RESPECTIVELY)	LM-6 (36) THRU LM-15 (45)	NOTED	H.D.	E WILLIAMS 9-12-68		

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS
C					

FOR CONTINUATION OF REVISIONS SEE SHEET _____

ENG 77.3 5-68

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17337	C (6)

SCALE NONE SHEET 1.11

01 NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17337-19	E	TUBE	AL ALY TUBE	QQ-A-200/11B	7075	1 3/8 O.D. x .058 x 19 1/8	SA CM T6	88	
		LDW280-17337-17	E	TUBE	AL ALY TUBE	QQ-A-200/11B	7075	1 3/8 O.D. x .058 x 18 5/8	SA CM T6	88	
-15								1 3/8 O.D. x .058 x 18 7/8	SA CM T6		
-13								1 3/8 O.D. x .049 x 19 5/8	SA CM T6		
		LDW280-17337-11	E	TUBE	AL ALY TUBE	QQ-A-200/11B	7075	1 3/8 O.D. x .049 x 19 1/8	SA CM T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
SA	SWAGING 7075	LSP14-15500
CM	CHEM-MILLING	LSP14-26100
T6	AL HEAT TREAT	MIL-H-6088
T73	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17337	C

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01 NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17337-37	E	TUBE	AL ALY TUBE	QQ-A-200/11B	7075	1 3/8 O.D.X.058X18 5/8	SA NOTE 7 CM	NOTE 6,7	
-35								1 3/8 O.D.X.058X18 7/8	SA NOTE 7 CM	NOTE 6 & 7	
-33								1 3/8 O.D.X.049X19 5/8	SA NOTE 4,5 CM	88	
-31								1 3/8 O.D.X.058X18 5/8	SA NOTE 4,5 CM	88	
		LDW280-17337-29				QQ-A-200/11B	7075	1 3/8 O.D.X.058X18 7/8	SA NOTE 4,5 CM	88	
		LDW280-17337-27			AL ALY TUBE	WW-T-700/3	2024T3	.8750.D.X.058X16 1/4	NONE	88	
		LDW280-17337-25	E	TUBE	AL ALY TUBE	WW-T-700/3	2024T3	.875 O.D.X.058X16 3/4	NONE	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17337	C

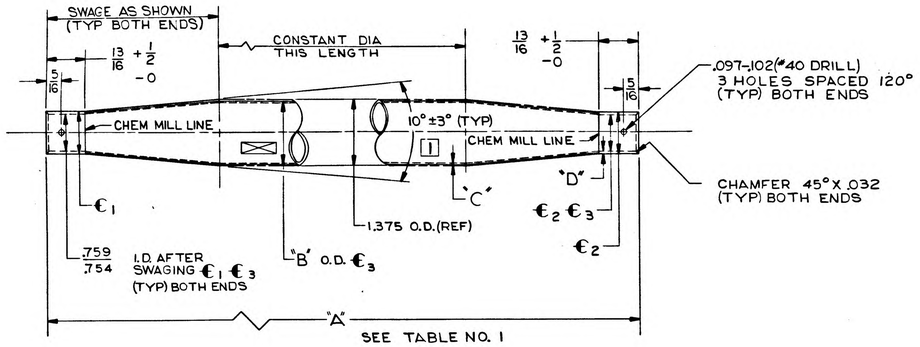
SCALE NONE SHEET 2.01

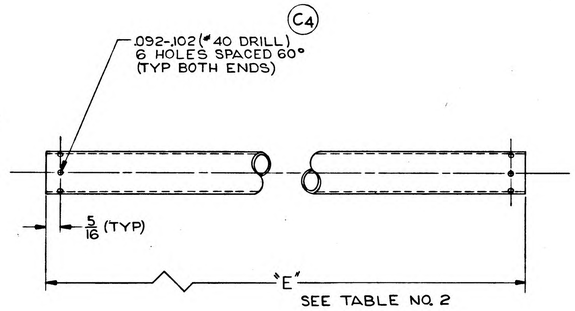
ENG 77.2 7-65

01

NAS 9-1100

SUPPLEMENTARY DATA UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
MARK PART NUMBER IN ACCORDANCE WITH MIL STD-130	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY	✓
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
INSTALL RIVETS IN ACCORDANCE WITH	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING Ⓒ1 = .010 Ⓒ2 = .010 Ⓒ3 = .030	✓





NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS.
2. CHEM MILL DEPTH REQUIRED TO ARRIVE AT "C" DIM IN CONSTANT DIA AREA TO BE MAINTAINED FOR ENTIRE CHEM MILLED LENGTH.
3. -19 MAY BE USED IN PLACE OF -11 FOR THE DESIGN VERIFCATION TEST AND QUALIFICATION TEST ONLY.
4. PARTS TO BE AGED FROM T63 TO T73 TEMPER BY AGING FOR 8-10 HOURS AT 350°±10° F (FOR -29-31 & -33 ONLY)
5. PARTS IN "W" TEMPER TO BE AGED TO T73 TEMPER BY AGING 6-8 HOURS AT 225°±10°F FOLLOWED BY AGING 8-10 HOURS AT 350°±10° F. (FOR -29-31 & -33 ONLY)
6. AFTER AGING TO T73 APPLY (2) COATS OF EPOXY PRIMER TO INSIDE PER LSP14-4305 BY EITHER SPRAY OR FILL AND DRAIN METHOD. FORCE DRY BETWEEN COATS PER LSP14-4305 (FOR 35 & 37 ONLY)
7. HEAT TREAT TO T6 AND ANODIZE, FINISH NO. 88 INTERNALLY AND EXTERNALLY. AGE FROM T6 TO T73 TEMPER BY AGING FOR 8-10 HOURS AT 350°±10° F. (FOR-35 & -37 ONLY)

TABLE NO. 1

	PART NO.		A LENGTH	B O.D.	C WALL THICKNESS AFTER CM CONST DIA AREA	D WALL THICKNESS BOTH ENDS AFTER SWAGING
	LDW280-17337	-11	$16\frac{5}{64}$ $^{+1/32}_{-}$	1.315	.024 .018	.056
		-13	$16\frac{17}{32}$ $^{+1/32}_{-}$	1.319	.025 .019	.062
		-15	$15\frac{27}{32}$ $^{+1/32}_{-}$	1.299	.024 .018	.073
		-17	$15\frac{9}{16}$ $^{+1/32}_{-}$	1.297	.023 .017	.068
Ⓒ1 Ⓒ2		-19	$16\frac{5}{64}$ $^{+1/32}_{-}$	1.299	.022 .018	.056
Ⓒ6		-29	$15\frac{27}{32}$ $^{+1/32}_{-}$	1.299	.024 .018	.073
		-31	$15\frac{9}{16}$ $^{+1/32}_{-}$	1.297	.023 .017	.068
Ⓒ7		-33	$16\frac{17}{32}$ $^{+1/32}_{-}$	1.319	.025 .019	.082
Ⓒ8		-35	$15\frac{27}{32}$ $^{+1/32}_{-}$	1.299	.024 .018	.073
	LDW280-17337	-37	$15\frac{9}{16}$ $^{+1/32}_{-}$	1.297	.023 .017	.068

TABLE NO. 2

Ⓒ3

PART NO.	E LENGTH	O.D.	WALL THICKNESS
LDW280-17337-25	$16\frac{17}{32}$ $^{+1/32}_{-}$	.875 (REF)	.058 (REF)
LDW280-17337-27	$16\frac{5}{64}$ $^{+1/32}_{-}$	.875(REF)	.058(REF)

LDW280-17337-11

CHEM-MILL LINE TOLERANCE: ±1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ±1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040		
SYMBOL	THICKNESS AFTER CHEM-MILLING	*DEPTH OF CUT
1	SEE "C" DIM & NOTE #2	.029 (REF)

Ⓒ7

LDW280-17337-13-33

CHEM-MILL LINE TOLERANCE: ±1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ±1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040		
SYMBOL	THICKNESS AFTER CHEM-MILLING	*DEPTH OF CUT
1	SEE "C" DIM & NOTE #2	.028 (REF)

Ⓒ6 Ⓒ8

LDW280-17337-15-19-29-35

CHEM-MILL LINE TOLERANCE: ±1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ±1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040		
SYMBOL	THICKNESS AFTER CHEM-MILLING	* DEPTH OF CUT
1	SEE "C" DIM & NOTE 2	.038 (REF)

Ⓒ6 Ⓒ8

LDW280-17337-17-31-37

CHEM-MILL LINE TOLERANCE: ±1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ±1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040		
SYMBOL	THICKNESS AFTER CHEM-MILLING	* DEPTH OF CUT
1	SEE "C" DIM & NOTE 2	.039 (REF)

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORPORATION BETHPAGE, NEW YORK 11714			
SIZE E	CODE IDENT NO. 26512	LDW280-17337	C
SCALE FULL		SHEET 3 OF 3	

DNG 734 REV 542

3 THIS DWG SUPERSEDES LDW280-17337 REV "B" 10-21-71

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LE0280- | EO NO. 26

CONTROL INFO NO. LM-3-3806

ON THE FOLLOWING PART NUMBERS INCREASE TOLERANCE OF THICKNESS AFTER CHEM-MILL

PART NUMBER *	REVISED THICKNESS	ORIG. THICKNESS	E.O. CHANGE
LDW280-10929-11-12	.016 - .022	.016 - .019	C1
LDW280-17259-19	.020 - .026	.020 - .024	B1
LDW280-17336-13	.018 - .024	.018 - .022	
-15	.016 - .022	.016 - .020	B1
LDW280-17337-11	.018 - .024	.018 - .022	
-13	.019 - .025	.019 - .023	
-15	.018 - .024	.018 - .022	
-17	.017 - .023	.017 - .021	B2
LDW280-17395-31	.019 - .025	.019 - .023	
-37	.019 - .025	.019 - .023	C1
LDW280-17683-19	.017 - .023	.017 - .021	A2
LDW280-17686-15	.021 - .027	.021 - .025	
-17	.016 - .022	.016 - .020	B1
LDW280-17943-19	.016 - .022	.016 - .020	A2

* USE APPLICABLE DASH NO. IN DESCRIP OF EO

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | 3

REASON FOR EO: INCREASE CHEM-MILL TOLERANCE TO MORE NEARLY AGREE WITH PERMISSIBLE WALL THICKNESS VARIATION. REF. LAV280-251A

DESCRIPTION OF EO: FOR * CHEM-MILL TOLERANCE +.006 -.000 WAS +.004 -.000

GAEC EO RELEASE: C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK | SCRAP — NOT REQD

	APPROVED BY	DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
	[illegible] 9/8	9-13-66	VDI			BM 9-14-66	[illegible] 9-14-66	[illegible] 9-17-66

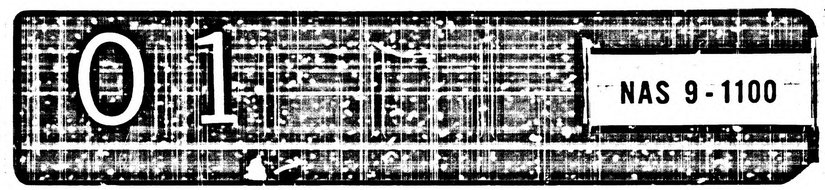
PRIORITY: E

DRAWING TITLE: SEE DRAWING

DRAWING NO.: LE0280-

ED NO.: 267

ISSUED BY LIAISON / VIC BOLLO X2151 SECTION VDI GROUP NO. 335 PL 35



ENG 22.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-17337 | EO NO. C1
CONTROL INFO NO. LDW280A4255

IN F/D & B/M
ADD -21 IDENT TO -19 EXCEPT NO CHEM MILLING REQUIRED
-21 EFF LM-1(31) N/A LDW280-25580 1 REQ/MOD
REMOVE LM-1 EFF FROM -11 (RESTRICT -11 TO LTA-5 & LTA-8)

2

PRE-THERMO SHIELD

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: MATL NOT AVAILABLE

DESCRIPTION OF EO: IN F/D & B/M ADDED -21 REMOVED LM-1 EFF FROM -11

GAEC EO RELEASE: FR 12/10/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-1(31)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: REWORK | -11 SCRAP

APPROVED BY							
	—	NM		HTW			
DATE	—	12-10-66		12-12-66	12/21/66	12/10/66	
	3	VIII	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: TUBE D.S. 5/6 HE TANK TRUSS SPT
DRAWING NO.: LDW280-17337
EO NO.: C1

ISSUED BY R. CLARK / J STRAKOSCH X1153 SECTION VD1 GROUP NO. 335 PL. 35

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NAS 9-1100

B

ENG 22.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280 17337 | EO NO. C2
CONTROL INFO NO. LM5-11626

IN MOD BLK
REMOVE LM1 EFF FROM -13 & -21
ADD LM1 EFF TO -25 & -27 N/A TO LDW280-25580(1EA/REQD)

RELEASED BY LIAISON

5

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: TO PROVIDE ADEQUATE CLEARANCE FOR S/C HE TANK LINES Q-D'S

DESCRIPTION OF EO: IN MOD BLK -25 & -27 ADDED LM1 & N/A TO LDW280-25580 -13 & -21 REMOVED LM1 EFF.

GAEC EO RELEASE: (4) C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM1		LM1(31)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
✓			-13 -21	WJT	1/17/67				P.J.C. 1/18/67	CH 1/18/67	RMC(6) 1/20/67
				6 VDI							~~CORF~~ 1/19/67

PRIORITY: C
DRAWING TITLE: TUBE D/S SC HE TANK TRUSS SUPT
DRAWING NO.: LDW280-17337
EO NO.: C2

ISSUED BY DON RAGAS x6458 SECTION VD1 GROUP NO. 335 PL 5

01

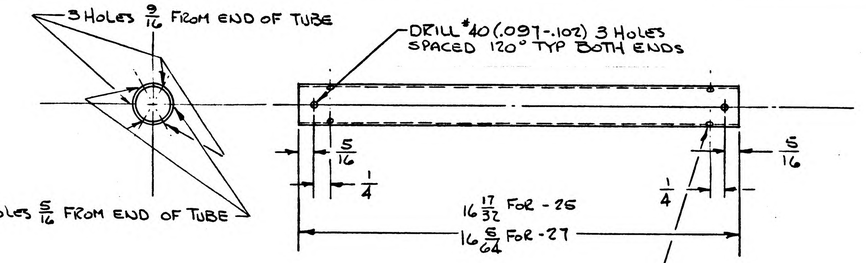
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280-17337		EO NO. C3
CONTROL INFO NO. LDW280 A-4662		



ADD F/D & B/M A00-25 & -27 AL. ALLOY 2024 T3 WW-T-785 TUBING .875 X .058 WALL THKNESS. FINISH (88) ANODIZE/LSP14-9030 I&T-E

ADD N/A FOR -25 & -27 ADD N/A LDW280-23580 LM 2(32) THRU LM15(45)
FOR -13 REMOVE LM 2(32) THRU LM15(45)

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		2

REASON FOR EO: TO PROVIDE ADEQUATE CLEARANCE FOR S/C He TANK LINES Q-D's LCR 746

DESCRIPTION OF EO: REMOVED -13 FROM LM-2(32) THRU LM-15(45) EFF
CREATED -25 & -27 N/A LDW280-23580 LM-2(32) THRU LM-15(45) (1 EA REQ'D/MOD)

GAEC EO RELEASE: FR 11/6/7

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
LM		LM-2(32) THRU		√			-13	5	11/4/67			11/4/67	11/4	11/5/67	
		LM-15(45)													

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	TUBE D/S S/C He TANK TRUSS SPT	LDW280-17337	C3

ISSUED BY V.A. CHRISTINA / J. STRAKOSCH SECTION V.D.I. x1153 GROUP NO. 335 PL 35

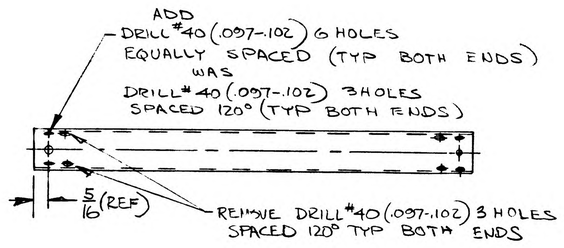
01 NAS 9-1100

B

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 EMF
ENGINEERING ORDER

DWG. NO. LDW280-17337 | EO NO. C4
CONTROL INFO NO. LDW280A-5002



IN F/D ADD (3) #40 HOLES ON BOTH ENDS OF TUBE AS SHOWN FOR -25 & -27

REWORK INFO (EXTRANEOUS HOLES MAY BE LEFT OPEN)

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: TO ENSURE (6) FASTENER POINTS ON ROD END FTGS

DESCRIPTION OF EO: FOR -25 & -27 ADDED (6) DRILL #40 HOLES; REMOVED DRILL #40 3 HOLES SPACED 120° (TYP BOTH ENDS)

GAEC EO RELEASE: 1/31/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-1 (31) THRU LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	DATE		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	SIGNATURE
	1/16/67		VDI		1/16/67	1/30/67		1/30/67	

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C D/S	S/C HE TANK TRUSS SUPPORT TUBE	LDW280-17337	C4

ISSUED BY G. BARNES/J. STRAKOSCH X1392 SECTION VDI GROUP NO. 335 PL 35

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.2 REV 3-66

DWG. NO. LEO280 | EO NO. 541
CONTROL INFO NO. LDW280A6132

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY 4 N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	N6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ | CL II ENGRG CHG | ✓ | CL I ENGRG CHG | LCD19-1242 | 2 C

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R	(96)

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK | SCRAP

APPROVED BY: GAC | DATE: 3/28/67 | 5 | YDI | SUPPORT | RELIAB GROUP

GROUP LEADER: JMS 3/28/67 | STRESS GROUP: W/M 4/3/67 | LIAISON ENGRG: 3.30.67 | PROJ ENGRG: 4/4/67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 541

ISSUED BY G. BECHER/J. STAHLSCH X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-66

ENGINEERING ORDER

DWG. NO. LDW290-17337 | EO NO. C6

CONTROL INFO NO. LDW280B0766

ADD -29 & -31 IDENTICAL TO -15 & -17 RESPECTIVELY EXCEPT AS NOTED: FOR -29 & -31 HEAT TREAT T73 (SEE NOTE *1, *2

-29 & -31 EFF LTA-3, LM-5 THRU LM-15 N/A LDW280-23580

REMOVE LTA-3, LM-5 THRU LM-15 FROM -15 & -17 EFF.

NOTE

*1 PARTS TO BE AGED FROM T62 TO T73 TEMPER BY AGING FOR 8-10 HRS @ 350°±10°F.

*2 PARTS IN W TEMPER TO BE AGED TO T73 TEMPER BY AGING 6-8 HRS @ 225°±10°F FOLLOWED BY AGING 8-10 HRS @ 350°±10°F

(SHOP INFO)

-29 & -31 MAY BE MADE BY REHEAT TREATING -15 & -17.

*1 USE NEXT AVAILABLE NO

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LCD 2459

REASON FOR EO: TO ELIMINATE CRACKING OF SWAGED TUBES

DESCRIPTION OF EO & NOTES *1, *2: ADDED -29 & -31

REMOVED LTA-3, LM-5 THRU LM-15 FROM -15 & -17 EFF.

GAEC EO RELEASE: 5 — 1/6/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3 (3)	
		LM-5(35) THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DW	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
		✓	

APPROVED BY									
	GAD	CAD		—	W/H		Gap	Bettis
DATE	11/16/67	11/16/67		—	2/16/68		11/16/67	1-4-68
B	VD1	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

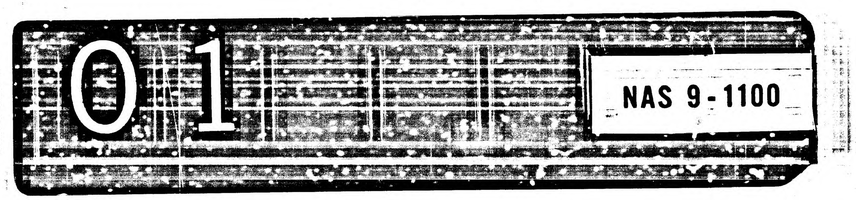
DRAWING TITLE: TUBE D/S 5/2 He TANK TRUSS SPT

DRAWING NO.: LDW280-17337

EO NO.: C6

61 05 28

ISSUED BY R. CLARK/P THORJUSEN 1153 SECTION VD1 GROUP NO. 280 PL 25



ENG 22.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-17337		EO NO. C7
CONTROL INFO NO. LM-2-4363		

ADD -33 IDENTICAL TO -13 EXCEPT AS NOTED:
FOR -33 HEAT TREAT T73 (SEE NOTE *1, *2) & (REF EO-C6)

REMOVE LTA-3D(13) EFFECTIVITY FROM -13.

NOTES: (REF. EO-C6)
*1 PARTS TO BE AGED FROM T62 TO T73 TEMPER BY AGING FOR 8-10 HRS. @ 350° ± 10° F.
*2 PARTS IN W TEMPER TO BE AGED TO T73 TEMPER BY AGING 6-8 HRS. @ 225° ± 10° F FOLLOWED BY AGING 8-10 HRS. @ 350° ± 10° F.

FOR REWORK: -33 MAY BE MADE BY REHEAT TREATING -13.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓ LCD 2459

REASON FOR EO: ELIMINATE CRACKING OF SWAGED TUBES.

DESCRIPTION OF EO: ADDED -33 & REMOVED -13; FOR LTA-3D(13) EFFECTIVITY.

GAEC EO RELEASE (2) 02025

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D(13)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		✓	

APPROVED BY	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG
DATE		—	1/12/68	1/16/68	1/17/68

PRIORITY: C
DRAWING TITLE: TUBE-DESCENT STAGE S/C HELIUM TANK TRUSS SPT.
DRAWING NO.: LDW280-17337
EO NO.: C7

ISSUED BY LIAISON J. MALONEY 1/8/68 X3604 SECTION V.D.I. GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-17337 | EO NO. C8
CONTROL INFO NO. LDW280B1542

ADD -35 ℄ -37 IDENTICAL TO -29 ℄ -31 RESPECTIVELY EXCEPT AS NOTED.
FOR -35 ℄ -37 N/A LDW280-23580, EFF. LM-6(36) THRU LM-15(45), 1 EACH REQ'D/MOD.
FOR -35 ℄ -37 IN B/M, FINISH NO., ADD (SEE NOTE *).

FOR -29 ℄ -31 REMOVE EFFECTIVITY LM-6(36) THRU LM-15(45).

ADD NOTE △. △ FOR -35 ℄ -37 ONLY, AFTER AGING TO T73, APPLY (2) COATS OF EPOXY PRIMER TO INSIDE PER LSP14-4305 BY EITHER SPRAY OR FILL ℄ DRAIN METHOD. FORCE DRY BETWEEN COATS PER LSP14-4305.
THIS E.O. REVISES E.O. C6, FOR NOTES *1 ℄ *2, ADD (FOR -29 ℄ -31 ONLY).

ADD NOTE □. □ FOR -35 ℄ -37 ONLY,
HEAT TREAT TO T6 AND ANODIZE, FINISH #88, INTERNALLY ℄ EXTERNALLY. AGE FROM T6 TO T73 TEMPER BY AGING FOR 8 TO 10 HOURS @ 350° ± 10° F.

(-35 ℄ -37 MAY BE MADE BY REWORKING -29 ℄ -31 RESPECTIVELY)
□ ℄ △ USE NEXT AVAILABLE NOTE NUMBER (6)

PKG 6

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	☑ LCD 2459	GAEC EO RELEASE
REASON FOR EO: TO ELIMINATE CRACKING OF SWAGED TUBES			DESCRIPTION OF EO: ADDED -35-37 ℄ NOTES △ ℄ □. FOR -29 ℄ -31 REMOVED EFF. LM-6 THRU LM-15. (REF E.O. C6) FOR NOTES *1 ℄ *2, ADDED (FOR -29 ℄ -31 ONLY)	VK 1-23-68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-6(36) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
		✓	

APPROVED BY							
DATE	1-19-68	1-22-68		1-22-68	1-23-68	1-24-68	1-24-68
	B	VDI	SUPPORT MATS	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG

PRIORITY: C
DRAWING TITLE: TUBE-D/S S/C He TANK TRUSS SUPPORT
DRAWING NO.: LDW280-17337
EO NO.: C8

26 JAN 68
ISSUED BY J. BACKOFEN X1153
SECTION VEH. DES. INT.
GROUP NO. 335 PL. 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 1374
CONTROL INFO NO. LDW280B7394

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17323 ✓	B3	SEE DWG
-17327 ✓	B4	
-17330 ✓	E1	
-17337 ✓	D1	
-17341	E1	
-17343	C3	
-17344	B3	
-17347	B3	
-17348	C4	
LDW280-17349	C1	SEE DWG

* APPLICABLE DASH NOS

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. B CCA 1821 (G)

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM — *

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	GSE CONFIG UNIT NO.
LM		LM-15(45)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: REWORK | ✓ SCRAP
APPROVED BY: VDI | SUPPORT | RELIAB. GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGR. | PROJ. ENGR.
DATE: 4-26-69 | 4-28-69

PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO 280
EO NO.: 1374

PS 2869 ISSUED BY MEVORAH / THORJUSEN X86046 SECTION VEH DES INT GROUP NO. 335-25

GAEC EO RELEASE

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

[redacted] LEO 280 | EO NO. 1541
CONTROL INFO NO. LDW 280B 8079

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40) ~~[redacted]~~
ADD LTA-11 ([redacted]23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING Nº *	TITLE	CHANGE Nº
LDW280-17337	SEE DWG	D2
341		E2
343		C4
344		B4
347		B4
348		C5
349		C2
356		B4
362		B6
LDW280-17327	SEE DWG	B5

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG 99 PG 3-4 & 5 & 6 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: JR 8-8-69; VR 8-8-69; [redacted] Cannon 8-9-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11([redacted]) (23)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: NOT REQ'D | REWORK | SCRAP

APPROVED BY						
DATE	7-29-69	VDI			8-2-69	
		SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GAEC

PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO: LEO 280
EO NO. 1541

8-12-69 ISSUED BY G. HANSMANN X87222 (ML) SECTION VDI GROUP NO 335 PL 25

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.		PART NO. LDW280-17339-19				PART NO. LDW280-17339-11, -13, -15, & -17			
				LEM	LDW280-28587	LTA-8(18)	4	LEM	LDW280-28587	LTA-8(18)	1 EA
										GAEC SCH NO. 51.3	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1	1-10	2	3						
REV	A	A								
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	
LAST DASH NO. USED	-19

GRUMMAN REL INFO: PRIM NO. LE(001) 215 PP12

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±½°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 LINE ITEM # 1 DOCUMENTATION TYPE II

DRAWN BY	P.SCHELL 11/17/65	RELIABILITY	—
LAYOUT BY	E. NEFF 12/10/65		
CHECKED BY	D. FASS 12-9-65		
GR. LEADER			
VEH. DES. INT.			
STRUCTURES	WPB 12/14 12/21/65	PROJ ENGR	12/14
STRUCTURES	12/22	REL GROUP	1-3-66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CHANNEL
DESCENT STAGE ~ UPPER DECKS ~ HELIUM
DISTRIBUTION SYSTEM SUPPORT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17339	A

SCALE NONE SHEET 1 OF 4

ENG 77.1 9-64

SWIP

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00 & 1.10					✓	LEO280-150	IN MOD BLK REMOVED EFF LTA-3(13), LTA-5(15), LEM-1(31), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35), LEM-6(36) FOR LDW280-17339-11,-13,-15,-17, & -19. (SHEET 1 OF 4 WAS 1 OF 3, ADDED SHEET 1.10)	LTA-3, -5, LEM-1, -2, -3, -4, -5, & -6		✓	N. CIOFFI 7-25-66		

CHG APPROVED

LTR	GROUP LDR	VEH DES. INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
A						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17339	A

SCALE NONE — SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17339-19	E	CLIP	AL ALLOY SH	QQ-A-250/12	7075	.020 x 1 3/4 x 1 7/8	T6	88	
		-17		CHANNEL				.020 x 2 3/4 x 11 7/8			
		-15		CHANNEL				.020 x 2 3/4 x 11 7/8			
		-13		CHANNEL				.020 x 2 3/4 x 11 3/4			
		LDW280-17339-11	E	CHANNEL	AL ALLOY SH	QQ-A-250/12	7075	.020 x 2 3/4 x 11 7/8	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

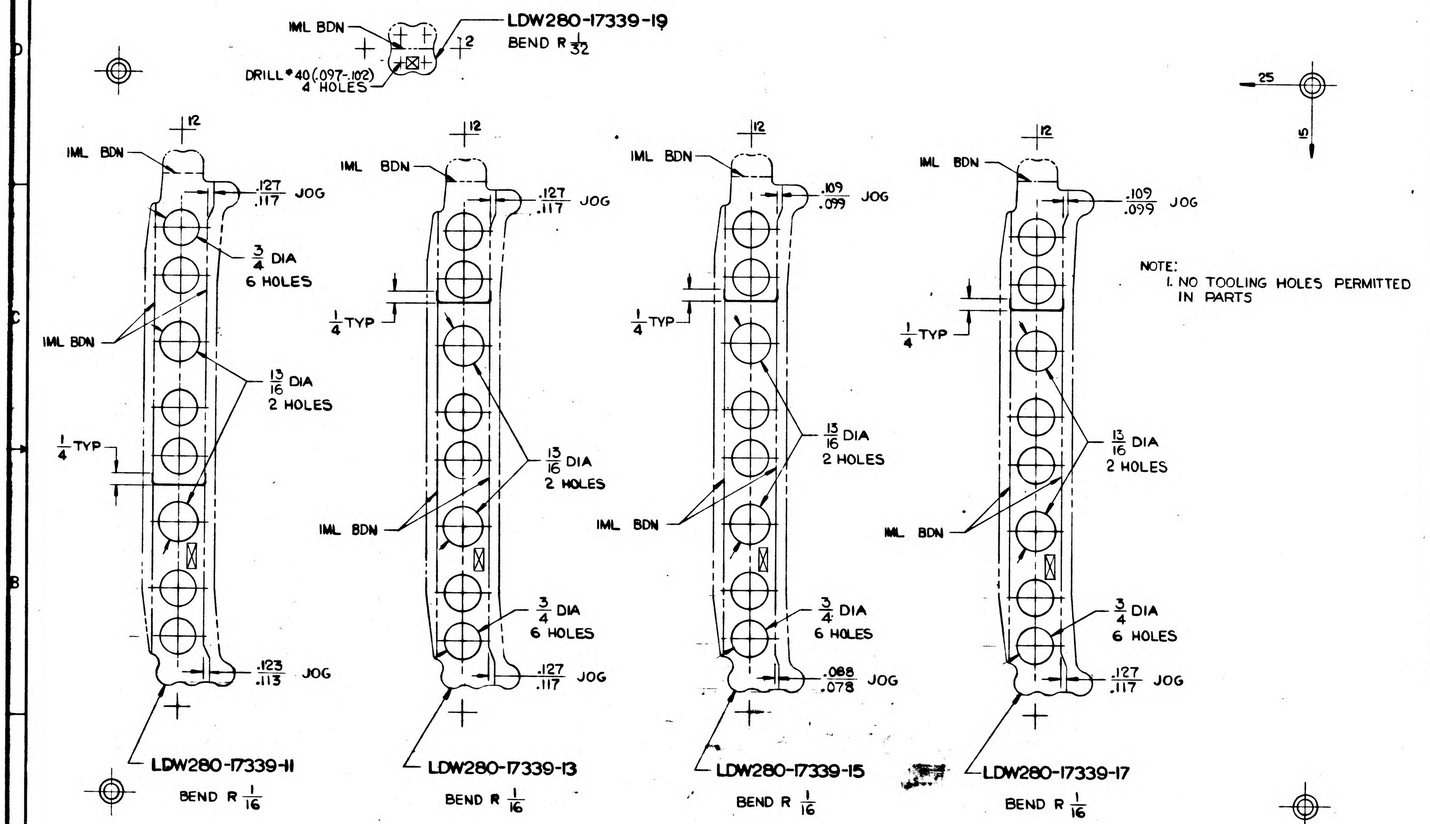
SIZE	CODE IDENT NO.	
B	26512	LDW280-17339

SCALE NONE SHEET 2

ENG 77.2 7-65

01

NAS 9-1100



NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .010R TO .062R ± .008 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
250 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL X DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK		
LEM	SIZE D	CODE IDENT NO. 26512	LDW280-17339
MODEL OR END ITEM	SCALE FULL		SHEET 3

NAS 9-1100

ENG 32.2 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 150
CONTROL INFO NO. LDW280-8029

FOR THE FOLLOWING DWG'S REVISE MOD BLK AS SHOWN BELOW

DWG NO.	CHG NO	- NO.	QTY IS	QTY WAS	EFF	NEXT ASSY IS	NEXT ASSY WAS	RWK	SCRAP
LDW280-17339	A1	-11	0	1	LTA-3	-	LDW280-23587		✓
		-13	0	1	LTA-5	-	LDW280-25587		✓
		-15	0	1	LEM-1	-	LDW280-25587		✓
		-17	0	1	LEM-2	-	LDW280-23587		✓
			0	1	THRU-6	-	LDW280-23587		✓
		-19	0	4	LTA-3	-	LDW280-23587		✓
		-19	0	4	LTA-5	-	LDW280-25587		✓
		-19	0	4	LEM-1	-	LDW280-25587		✓
		-19	0	4	LEM-2	-	LDW280-23587		✓
		-19	0	4	THRU-6	-	LDW280-23587		✓
LDW280-17390	A1	-11	-	-	LEM-1	LDW280-51587	LDW280-25587	NOT REQ'D	
		-13							
		-15							
LDW280-17422	A1	-17	0	1	LTA-8	-	LDW280-28587		✓
		-13	1	0	LTA-5	LDW280-25587	-		
		-13	1	0	LEM-1	LDW280-51587	-		
		-13	1	0	LTA-3	LDW280-23587	-		
		-13	1	0	LEM-2	LDW280-52587	-		
		-13	1	0	LEM-3	LDW280-52587	-		
		-13	1	0	LEM-4	LDW280-54587	-		
		-13	1	0	THRU-6	LDW280-54587	-		
		-15	1	0	LTA-5	LDW280-25537	-		
		-15	1	0	LEM-1	LDW280-51587	-		
LDW280-17423	A2	-13	0	1	LTA-3	-	LDW280-23587		✓
		-13	0	1	LEM-2	-	LDW280-23587		✓
		-13	0	1	LEM-3	-	LDW280-23587		✓
		-13	0	1	LEM-4	-	LDW280-54587		✓
		-13	0	1	THRU-6	-	LDW280-54587		✓
		-14	0	1	LTA-5	-	LDW280-25587		✓
		-14	0	1	LEM-1	-	LDW280-51587		✓
			0	1	LTA-5	-	LDW280-25587		✓
			0	1	LEM-1	-	LDW280-51587		✓
			0	1	LTA-3	-	LDW280-23587		✓
		-11	0	1	LEM-2	-	LDW280-23587		✓
		-15	0	1	LEM-3	-	LDW280-23587		✓
			0	1	LEM-4	-	LDW280-54587		✓
			0	1	THRU-6	-	LDW280-54587		✓
LDW280-17424	A1		1	0	LTA-5	LDW280-25587	-	NOT REQ'D	
			1	0	LEM-1	LDW280-51587	-		
			1	0	LTA-3	LDW280-23587	-		
		-11	1	0	LEM-2	LDW280-52587	-		
		-13	1	0	LEM-3	LDW280-52587	-		
			1	0	LEM-4	LDW280-54587	-		
			1	0	THRU-6	LDW280-54587	-		
LDW280-17428	A1	-11	2	1	LTA-8	-	-	NOT REQ'D	
LDW280-17560	B1	-11	0	1	LTA-3	-	LDW280-23587		✓
		-13	0	1	LTA-3	-	LDW280-23587		✓
		-11	-	-	LEM-3	LDW280-52587	LDW280-53587		
		-13	-	-	LEM-3	LDW280-52587	LDW280-53587		
		-11	-	-	LEM-5	LDW280-54587	LDW280-55587		
		-13	-	-	LEM-5	LDW280-54587	LDW280-55587		
		-11	-	-	LEM-6	LDW280-54587	LDW280-56587		
		-13	-	-	LEM-6	LDW280-54587	LDW280-56587		

DETAIL SPEC REQ | CL II ENGRG CHG | ✓ CL I ENGRG CHG

REASON FOR EO: TO AGREE WITH N/A

DESCRIPTION OF EO: NOTED ABOVE

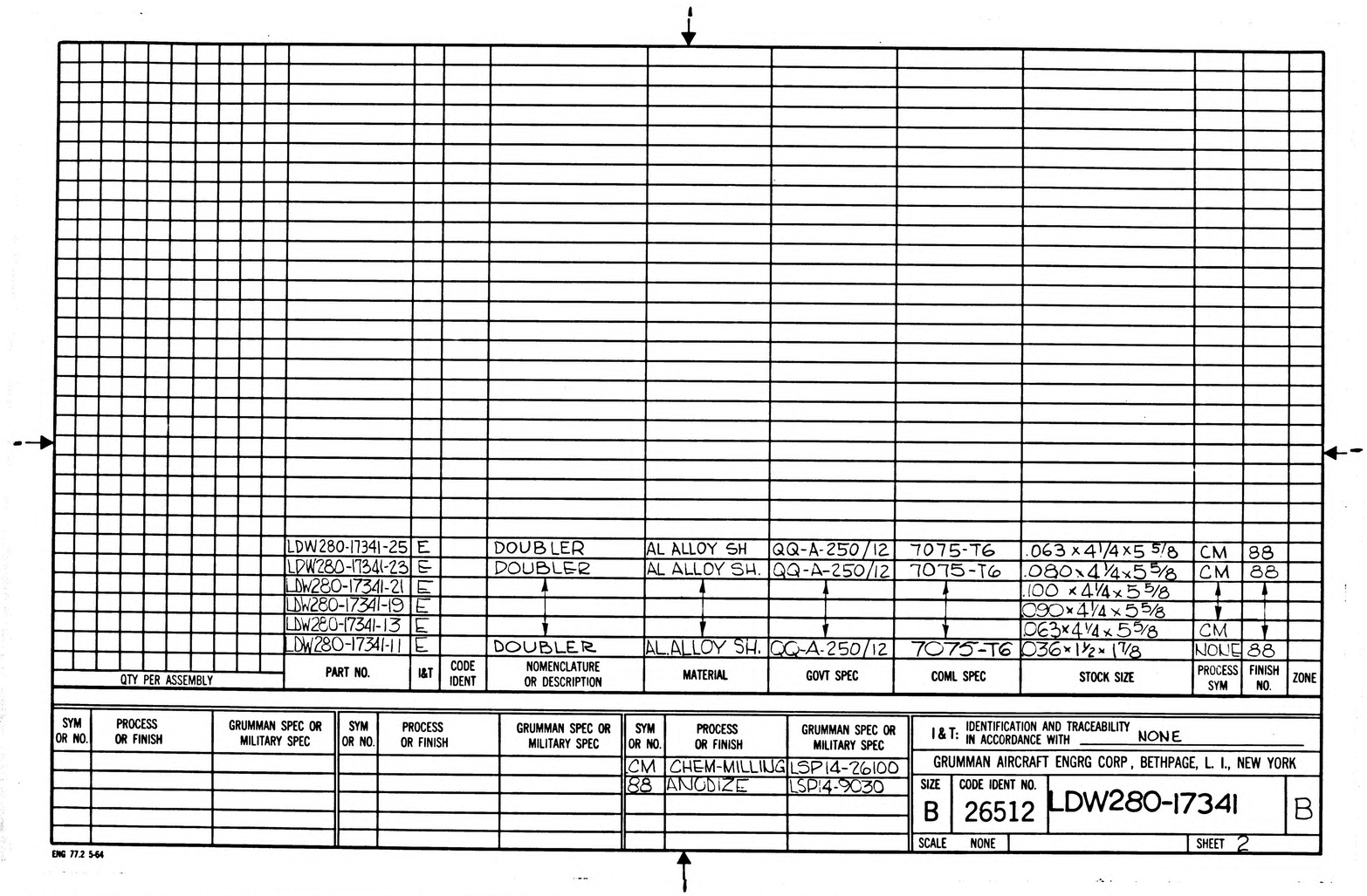
GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	CONT
LEM		NOTED		✓		NOTED		6-21-66	VD1				6/22/66			

PRIORITY: C | DRAWING TITLE: SEE DRAWINGS | DRAWING NO.: LEO 280 | EO NO.: 150

SUED BY E MOUQUIN x1153 SECTION VEH. DES. INT. GROUP NO. 335 PL 35

NAS 9-1100



QTY PER ASSEMBLY	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	LDW280-17341-25	E		DOUBLER	AL ALLOY SH	QQ-A-250/12	7075-T6	.063 x 4 1/4 x 5 5/8	CM	88	
	LDW280-17341-23	E		DOUBLER	AL ALLOY SH.	QQ-A-250/12	7075-T6	.080 x 4 1/4 x 5 5/8	CM	88	
	LDW280-17341-21	E		↕	↕	↕	↕	.100 x 4 1/4 x 5 5/8	↕	↕	
	LDW280-17341-19	E						.090 x 4 1/4 x 5 5/8			
	LDW280-17341-13	E						.063 x 4 1/4 x 5 5/8	CM		
	LDW280-17341-11	E		DOUBLER	AL ALLOY SH.	QQ-A-250/12	7075-T6	.036 x 1 1/2 x 1 7/8	NONE	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
CM	CHEM-MILLING	LSP14-26100
88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

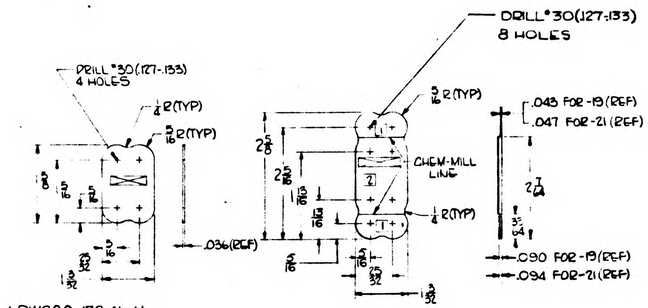
SIZE	CODE IDENT NO.		
B	26512	LDW280-17341	B

SCALE NONE SHEET 2

ENG 77.2 5-64

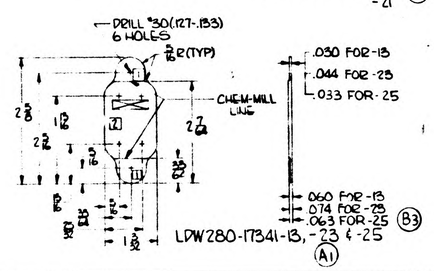
01

NAS 9-1100



LDW280-17341-11 (A1)

LDW280-17341-19 -21 (A1)



LDW280-17341-13, -23 & -25 (A1) (B3)

LDW280-17341-13-25

SYMBOL	THICKNESS AFTER CHEM-MILLING	±DEPTH OF CUT
1	.030 +.003 -.000	.033 ±.005
2	.060 ±.004	.003 ±.001

LDW280-17341-19

SYMBOL	THICKNESS AFTER CHEM-MILLING	±DEPTH OF CUT
	.048 +.003 -.000	.047 ±.005

LDW280-17341-21

SYMBOL	THICKNESS AFTER CHEM-MILLING	±DEPTH OF CUT
1	.047 +.003 -.000	.053 ±.004
2	.094 ±.004	.006 ±.001

LDW280-17341-23

SYMBOL	THICKNESS AFTER CHEM-MILLING	±DEPTH OF CUT
1	.044 +.003 -.000	.036 ±.005
2	.074 ±.004	.006 ±.001

GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO		
C	26512	LDW280-17341	B

MODEL OR END ITEM | SCALE | SHEET

NAS 9-1100

LDW280-17341 B

LEM	LDW280-28539	LTA-8(18)	1	
LEM	LDW280-25539	LTA-5(15)	1	
LEM	LDW280-23539	LTA-3(13)	1	
LEM	LDW280-23536	LEM-6(36)	2	
LEM	LDW280-23536	LEM-5(35)	2	
LEM	LDW280-23536	LEM-4(34)	2	
LEM	LDW280-23536	LEM-3(33)	2	
LEM	LDW280-23536	LEM-2(32)	2	
LEM	LDW280-25536	LEM-1(31)	2	
LEM	LDW280-25536	LTA-8(18)	2	
LEM	LDW280-25536	LTA-5(15)	2	
LEM	LDW280-23536	LTA-3(13)	2	

PART NO. LDW280-17341-19

LEM	LDW280-54531	LEM-6(36)	1	
LEM	LDW280-54531	LEM-5(35)	1	
LEM	LDW280-54531	LEM-4(34)	1	
LEM	LDW280-52531	LEM-3(33)	1	
LEM	LDW280-52531	LEM-2(32)	1	
LEM	LDW280-28531	LEM-1(31)	1	
LEM	LDW280-28531	LTA-8(18)	1	
LEM	LDW280-25531	LTA-5(15)	1	
LEM	LDW280-23531	LTA-3(13)	1	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17341-13 CONT'D — GAEC SCH NO. 51-4

LEM	LDW280-23530	LEM-6(36)	2	
LEM	LDW280-23530	LEM-5(35)	2	
LEM	LDW280-23530	LEM-4(34)	2	
LEM	LDW280-23530	LEM-3(33)	2	
LEM	LDW280-23530	LEM-2(32)	2	
LEM	LDW280-25530	LEM-1(31)	2	
LEM	LDW280-25530	LTA-8(18)	2	
LEM	LDW280-25530	LTA-5(15)	2	
LEM	LDW280-23530	LTA-3(13)	2	
LEM	LDW280-54525	LEM-6(36)	2	
LEM	LDW280-54525	LEM-5(35)	2	
LEM	LDW280-54525	LEM-4(34)	2	
LEM	LDW280-52525	LEM-3(33)	2	
LEM	LDW280-52525	LEM-2(32)	2	
LEM	LDW280-25525	LEM-1(31)	2	
LEM	LDW280-25525	LTA-8(18)	2	
LEM	LDW280-25525	LTA-5(15)	2	
LEM	LDW280-23525	LTA-3(13)	2	
LEM	LDW280-54524	LEM-6(36)	2	
LEM	LDW280-54524	LEM-5(35)	2	
LEM	LDW280-54524	LEM-4(34)	2	
LEM	LDW280-52524	LEM-3(33)	2	
LEM	LDW280-52524	LEM-2(32)	2	
LEM	LDW280-28524	LEM-1(31)	2	
LEM	LDW280-28524	LTA-8(18)	2	
LEM	LDW280-25524	LTA-5(15)	2	
LEM	LDW280-23524	LTA-3(13)	2	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17341-13 — GAEC SCH NO. 51-4

LEM	LDW280-23634	LTA-3D/R(46)	1 EA
LEM	LDW280-23634	LEM-15(45)	1 EA
		LEM-14(44)	1 EA
		LEM-13(43)	1 EA
		LEM-12(42)	1 EA
		LEM-11(41)	1 EA
		LEM-10(40)	1 EA
		LEM-9(39)	1 EA
		LEM-8(38)	1 EA
		LEM-7(37)	1 EA
LEM	LDW280-23634	LEM-6(36)	1 EA
LEM	LDW280-23634	LEM-5(35)	1 EA
LEM	LDW280-23634	LEM-4(34)	1 EA
LEM	LDW280-23634	LEM-3(33)	1 EA
LEM	LDW280-25577	LEM-1(31)	1 EA
LEM	LDW280-25577	LTA-8(18)	1 EA
LEM	LDW280-25577	LTA-5(15)	1 EA
LEM	LDW280-23634	LTA-3(13)	1 EA
LEM	LDW280-23634	TM-5/R(65)	1 EA

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17341-11-23 — GAEC SCH NO. 51-4

FOR CONTINUATION OF DASH NOS SEE SH 1.01

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00	1.01	1.10	2.00	3.00					
REV	D	D	D	3	B					
SHEET		1.02	1.11							
REV		D	D							
SHEET		1.03								
REV		D								

LAST SECT LTR USED		GRUMMAN REL INFO	D	
LAST DASH NO. USED	-25	PRIM NO.	201	LK(60) 11/6/67 ME-162

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS — DECIMALS — ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS9-1100 — LINE ITEM 1 — DOCUMENTATION TYPE II

DRAWN BY	N. DURINGER 7-7-65	RELIABILITY	7-11
LAYOUT BY	A. Ficina 7/12/65		
CHECKED BY	7-7-65		
G.R. LEADER	7/12/65		
VEH DES INT	7/7		
STRUCTURE	7/15/65		
STRUCTURE	7-16	PROJ ENGR	7/17
WEIGHT	7-16	RELEASE	7/17

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

DOUBLER
DES. STAGE-PROPELLANT TANK SUP.

SIZE	CODE IDENT NO.		
B	26512	LDW280-17341	D
SCALE	NONE	SHEET 1.00 OF 8	

ENG 77.1 9-64

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-54528	LTA-3D/R(46)	1
LEM	LDW280-54528	LEM-15(45)	1
		LEM-14(44)	
		LEM-13(43)	
		LEM-12(42)	
		LEM-11(41)	
		LEM-10(40)	
		LEM-9(39)	
		LEM-8(38)	
		LEM-7(37)	1
LEM	LDW280-54528	LEM-6(36)	1
LEM	LDW280-54528	LEM-5(35)	1
LEM	LDW280-54528	LEM-4(34)	1
LEM	LDW280-23528	LTA-3(13)	1

PART NO. LDW280-17341-25 GAEC SCH NO.

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-54537	LEM-6(36)	1
	-54537	LEM-5(35)	1
	-54537	LEM-4(34)	1
	-52537	LEM-3(33)	1
	-52537	LEM-2(32)	1
	-51537	LEM-1(31)	2
	-25537	LTA-8(18)	2
	-25537	LTA-5(15)	2
	-23537	LTA-3(13)	1
	-54534	LEM-6(36)	2
	-54534	LEM-5(35)	
	-54534	LEM-4(34)	
	-23534	LEM-3(33)	
	-23534	LEM-2(32)	
	-25534	LEM-1(31)	
	-25534	LTA-8(18)	
	-25534	LTA-5(15)	
	-23534	LTA-3(13)	
	-54527	LEM-6(36)	
	-54527	LEM-5(35)	
	-54527	LEM-4(34)	
	-23527	LEM-3(33)	
	-23527	LEM-2(32)	
	-25527	LEM-1(31)	
LEM	LDW280-25527	LTA-8(18)	2

PART NO. LDW280-17341-21 (CONT.) GAEC SCH NO. 51-4

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-25527	LTA-5(15)	2
	-23527	LTA-3(13)	
	-54526	LEM-6(36)	
	-54526	LEM-5(35)	
	-54526	LEM-4(34)	
	-52526	LEM-3(33)	
	-52526	LEM-2(32)	
	-25526	LEM-1(31)	
	-25526	LTA-8(18)	
	-25526	LTA-5(15)	
LEM	LDW280-23526	LTA-3(13)	2

PART NO. LDW280-17341-21

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-23539	LEM-6(36)	1
LEM	LDW280-23539	LEM-5(35)	1
LEM	LDW280-23539	LEM-4(34)	1
LEM	LDW280-23539	LEM-3(33)	1
LEM	LDW280-23539	LEM-2(32)	1
LEM	LDW280-25539	LEM-1(31)	1

PART NO. LDW280-17341-19 CONT'D GAEC SCH NO. 51-4

FOR CONTINUATION OF DASH NO'S SEE SHT 1.02

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET									
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED

LAST DASH NO. USED

GRUMMAN REL INFO

PRIM NO.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS — DECIMALS — ANGLES

ORIG DWG AUTH

DETAIL SPEC REQUIREMENT

CLASS II ENGRG CHANGE

CLASS I ENGRG CHANGE

CONTRACT NO.

DRAWN BY

LAYOUT BY

CHECKED BY

PROJ ENGR

LINE ITEM

DOCUMENTATION TYPE

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

DOUBLER
DES. STAGE-PROPELLANT TANK SUP.

SIZE	CODE IDENT NO.		
B	26512	LDW280-17341	D

SCALE NONE SHEET 1.01 OF 8

ENG 77.1 9-64

01 NAS 9-1100

LEM	LDW 280-23536	LTA-3D/R(46)	2
LEM	LDW 280-23536	LEM-15(45)	2
		LEM-14(44)	
		LEM-13(43)	
		LEM-12(42)	
		LEM-11(41)	
		LEM-10(40)	
		LEM-9(39)	
		LEM-8(38)	
LEM	LDW 280-23536	LEM-7(37)	2

PART NO LDW 280-17341-19 CONT'D

LEM	LDW280-54531	LTA-3D/R(46)	1
LEM	LDW 280-54531	LEM-15(45)	1
		LEM-14(44)	
		LEM-13(43)	
		LEM-12(42)	
		LEM-11(41)	
		LEM-10(40)	
		LEM-9(39)	
		LEM-8(38)	
LEM	LDW 280-54531	LEM-7(37)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
		GAEC SCH NO.	

PART NO. LDW 280-17341-13 CONT'D

LDW 280-17341 D

LEM	LDW 280-23530	LTA-3D/R(46)	2
LEM	LDW 280-23530	LEM-15(45)	2
		LEM-14(44)	
		LEM-13(43)	
		LEM-12(42)	
		LEM-11(41)	
		LEM-10(40)	
		LEM-9(39)	
		LEM-8(38)	
LEM	LDW 280-23530	LEM-7(37)	2

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
		GAEC SCH NO.	

PART NO. LDW 280-17341-13 CONT'D

LEM	LDW 280-54525	LTA-3D/R(46)	2
LEM	LDW 280-54525	LEM-15(45)	2
		LEM-14(44)	
		LEM-13(43)	
		LEM-12(42)	
		LEM-11(41)	
		LEM-10(40)	
		LEM-9(39)	
		LEM-8(38)	
LEM	LDW 280-54525	LEM-7(37)	2

LEM	LDW 280-54524	LTA-3D/R(46)	2
LEM	LDW 280-54524	LEM-15(45)	2
		LEM-14(44)	
		LEM-13(43)	
		LEM-12(42)	
		LEM-11(41)	
		LEM-10(40)	
		LEM-9(39)	
		LEM-8(38)	
LEM	LDW 280-54524	LEM-7(37)	2

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
		GAEC SCH NO.	

PART NO. LDW 280-17341-13 CONT'D

FOR CONTINUATION OF DASH NOS SEE SH 1.03

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES	CONTRACT NO.	LINE ITEM / DOCUMENTATION TYPE
SHEET / REV / SHEET / REV / SHEET / REV	ORIG DWG AUTH / DETAIL SPEC REQUIREMENT / CLASS II ENGRG CHANGE / CLASS I ENGRG CHANGE	DRAWN BY / LAYOUT BY / CHECKED BY / PROJ ENGR / REL GROUP	GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK
LAST SECT LTR USED / LAST DASH NO USED	GRUMMAN REL INFO PRIM NO.		DOUBLER DES. STAGE-PROPELLANT TANK SUP.
			SIZE B / CODE IDENT NO. 26512 / LDW 280-17341 / D
			SCALE NONE / SHEET 1.02 OF 8

ENG 77.1 12-65

NAS 9-1100

LEM	LDW 280-54537	LTA-3D/R(46)	1
LEM	LDW 280-54537	LEM-15(45)	1
		LEM-14(44)	
		LEM-13(43)	
		LEM-12(42)	
		LEM-11(41)	
		LEM-10(40)	
		LEM-9(39)	
		LEM-8(38)	
LEM	LDW 280-54537	LEM-7(37)	1
LEM	LDW 280-54534	LTA-3D/R(46)	2
LEM	LDW 280-54534	LEM-15(45)	2
		LEM-14(44)	
		LEM-13(43)	
		LEM-12(42)	
		LEM-11(41)	
		LEM-10(40)	
		LEM-9(39)	
		LEM-8(38)	
LEM	LDW 280-54534	LEM-7(37)	2
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW 280-17341-21 CONT'D		GAEC SCH NO.	

D

LDW 280-17341

LEM	LDW 280-54527	LTA-3D/R(46)	2
LEM	LDW 280-54527	LEM-15(45)	2
		LEM-14(44)	
		LEM-13(43)	
		LEM-12(42)	
		LEM-11(41)	
		LEM-10(40)	
		LEM-9(39)	
		LEM-8(38	
LEM	LDW 280-54527	LEM-7(37)	2
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW 280-17341-21 CONT'D		GAEC SCH NO.	

LEM	LDW 280-54526	LTA-3D/R(46)	2
LEM	LDW 280-54526	LEM-15(45)	2
		LEM-14(44)	
		LEM-13(43)	
		LEM-12(42)	
		LEM-11(41)	
		LEM-10(40)	
		LEM-9(39)	
		LEM-8(38)	
LEM	LDW 280-54526	LEM-7(37)	2
PART NO. LDW 280-17341-21 CONT'D			
LEM	LDW 280-23539	LTA-3D/R(46)	1
LEM	LDW 280-23539	LEM-15(45)	1
		LEM-14(44)	
		LEM-13(43)	
		LEM-12(42)	
		LEM-11(41)	
		LEM-10(40)	
		LEM-9(39)	
		LEM-8(38)	
LEM	LDW 280-23539	LEM-7(37)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW 280-17341-19 CONT'D		GAEC SCH NO.	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS — ANGLES	CONTRACT NO. / LINE ITEM / DOCUMENTATION TYPE
SHEET / REV / SHEET / REV / SHEET / REV		ORIG DWG AUTH	DRAWN BY / LAYOUT BY / CHECKED BY
LAST SECT LTR USED	GRUMMAN REL INFO	DETAIL SPEC REQUIREMENT	GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK
LAST DASH NO. USED	PRIM NO.	CLASS II ENGRG CHANGE	DOUBLER
		CLASS I ENGRG CHANGE	DES.STAGE-PROPELLANT TANK SUP.
			PROJ ENGR / REL GROUP
			SIZE B / CODE IDENT NO. 26512 / LDW 280-17341 / D
			SCALE NONE / SHEET 1.03 OF 8

ENG 77.1 12-65

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SUPERSEDING CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.10, 1, 1.01, 2 & 3						✓	E-O A1	TRIMMED -11 & -13, REMOVED -15 & -17, & ADDED -19, -21 & -23. REVISED N/A OF -11 & -13; ADDED LEM-4, LEM-5, & LEM-6 FOR -11 & -13, FOR -11 N/A WAS LDW280-23533, FOR -13 N/A FOR LTA-5, LTA-8 & LEM-1 WAS LDW280-23524, LDW280-23525, LDW280-23530, & LDW280-23531. (SH. 1 OF 5 WAS 1 OF 4. ADDED SH. 1.10).	NOTED	-11 -13	-15 -17	J. JAEGGI 11-30-65		
B	1	1.10 & 1.01						✓	LEO280-73	ON -21 IN MOD/BLK N/A FOR LEM-1 WAS LDW280-25537	LEM-1	NOT	REQD	R. PRINZIVALLI 5-13-66		
	2	1 & 1.10							LEO280-89	ON -19 IN MOD/BLK N/A FOR LTA-8(18) WAS LDW280-25539	LTA-8					
	3	1, 1.01, 1.10, 2 & 3						✓	E-O B3	REVISED EFF OF -13 WAS LTA-3, LEM-2 THRU LEM-6 & ADDED N/A LDW280-54524 & 54531. REVISED EFF OF -21 WAS LTA-3, LEM-2 THRU LEM-6 & ADDED N/A LDW280-54526, 54527, 54534, 54537 & 52537. QTY OF -21 WAS (2) FOR N/A LDW280-23537. ADDED IN F/D, B/M & MOD/BLK -25	LTA-3 LEM-2 THRU LEM-6		✓			
	4	1.00, 1.10							LEO280-118	FOR -13, CHANGED N/A TO LDW280-52525 FOR LEM-2 & 3 EFF.	LEM-2 LEM-3	NOT	REQD	R. PRINZIVALLI 5-13-66		
	5	1.01, 1.10							LEO280-120 (R)	FOR -21 CHANGED N/A FOR LEM-2 (32) & LEM-3 (33) EFF. FROM LDW280-23526 TO LDW280-52526.				J. GARUDA 6-22-66		
C	1	1.00 1.10							LEO 280-160	FOR -13 N/A WAS LDW 280-23531 EFF LTA-3 LEM 2 & 3 ADDED N/A LDW 280-52531 FOR LEM-2 & 3	LM-2 LM-3	NOT	REQD	A. GRENIER 1-9-69		
	2	1.00 1.10							LEO 280-161	FOR -13 N/A WAS LDW 280-25531 EFF LTA-5, -8 & LEM-1 ADDED N/A LDW 280-28531 FOR LTA-8 & LEM-1	LTA-8 LM-1	NOT	REQD			
	3	1.00 1.10							LEO 280-162	FOR -13 N/A WAS LDW 280-25531 EFF LTA-5-8 & LEM-1. ADDED N/A LDW 280-28524 FOR LTA-8(18) LEM-1(31)	LM-1 LTA-8	NOT	REQD			
	4	1.00 1.10							LEO 280-164	FOR -13 N/A WAS LDW 280-23531 EFF LTA-3, LEM-2 & 3 ADDED N/A LDW 280-52524 FOR LEM-2 & 3	LM-2 LM-3	NOT	REQD			

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY
A						
B						
C						

FOR CONTINUATION OF REVISIONS SEE SHEET 1.11

ENG 77.3 5-64

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17341	D

SCALE NONE | SHEET 1.10

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
C	5							LEO 280-181	SUPERSEDES NOTED Ⓡ CHANGE ON LEO 164 FOR -13 N/A WAS LDW 280-23524 LTA-3, LEM-2 & 3 ADDED N/A LDW 280-52524 LEM-2 & 3 ADDED SH 1.11 Ⓟ	LM-2 LM-3	NOT	REQD	A. GREINER 1-9-69		
D	1	1.00, 1.01 1.02, 1.03						LEO 280-301	FOR -11, -13, -19, -21, -23, & -25 ADDED LEM-7 THRU LEM-15 EFF ADDED SH 1.02 & 1.03	LM-7 THRU LM-15	NOT	REQD	A. GREINER 1-9-69		
	2	1.00, 1.01 1.02, 103					✓	LEO 280-541 LCD 1242	IN M/B FOR -11, -13; 19, -21, -23 & 25 ADDED LTA-3 DR EFF	LTA-3 D/R (46)	NOT	REQD			
	3	1.00.			✓			EO D3	FOR -11 & -23 REMOVED NEXT ASSY LDW 280-23577	LTA-3, LTA-3 D/R LM-2 THRU LM-15		✓			
	4	1.00					✓	EO-D4	IN FLD/DWG, B/M & MOD/BLK REINSTATED -11 & -23 FOR NEXT ASSY LDW 280-23634	LTA-3, LTA-3 D/R LM-3 THRU LM-15	NOT	REQD			
	5	1.00				✓		LEO 280-952 LCD 3075 CCA 586	ON -11 & 23 ADDED TM-5/R (65) REQMTS	TM-5/R (65)	NOT	REQD			
	6							Ⓡ	REF LEO 280-162 LDW 280-25531 S/B-25524	LM-1, LTA-8					

C4D

LTR	GROUP LDR	VEH DES INT	STRUCT	STRUCT	WEIGHTS	RELIABILITY
C	R.T. 1-15-69					
D	J. Thorjussen 1/16/69	NM 1-16-69	W.M. 1/16/69			

FOR CONTINUATION OF REVISIONS SEE SHEET _____

ENG 77.3 5-66

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW 280-17341	D Ⓟ

SCALE NONE — SHEET 1.11

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO.	LEO 280		EO NO. 73
CONTROL INFO NO.	LDW 280-5400		

FOR THE NOTED *PART NOS., N/A FOR LEM-1 NOW LDW 280-51537
(WAS LDW 280-25537)

LDW280-17159 *16	CLIP	B1
*15		
*14		
*13		
*12		
LDW280-17159 *11	CLIP	
LDW280-17158 *24	ANGLE	B2
LDW280-17158 *22		
LDW280-17157 *26		C1
*24		
*22		
*20		
LDW280-17157 *18		
LDW280-17156 *28		B1
*26		
*24		
*22		
LDW280-17156 *20		
LDW280-17155 *26		B1
*24		
*22		
LDW280-17155 *20	ANGLE	
LDW280-17137 *12	WEB	C1

CHG NO.

LDW280-17278 *20	CLIP	B1
LDW280-17278 *11	SUPPORT	
LDW280-17277 *17	ANGLE	B1
*15		
*13		
LDW280-17277 *11	ANGLE	
LDW280-17221 *13	ANGLE	A1
LDW280-17219 *11	ANGLE	A1
LDW280-17192 *15	DOUBLER	A3
LDW280-17164 *11	TEE CLIP	A1
LDW280-17163 *13	ANGLE	A2
LDW280-17163 *11	ANGLE	
LDW280-17162 *17	DOUBLER	B1
*15	DOUBLER	
*13	SHIM	
LDW280-17162 *11	SHIM	
LDW280-17161 *19	ZEE	B1
LDW280-17161 *18	ZEE	
LDW280-17161 *17	ZEE	
LDW280-17160 *14	STIFFENER	A2
LDW280-17160 *12	STIFFENER	

CHG NO.

LDW280M17229 *5	TEE	B2
LDW280M17228 *5	TEE	B1
LDW280M17227 *3	ANGLE	B1
LDW280M17227 *1	ANGLE	
LDW280M17135 *1	ANGLE	C1
LDW280M17114 *1	CAPSTRIP	B1
LDW280M17106 *1	CAPSTRIP	B2
LDW280-17400 *11	CLIP	A1
LDW280-17354 *14	ANGLE	A1
LDW280-17354 *12	ANGLE	
LDW280-17341 *21	DOUBLER	B1
LDW280-17331 *18	ANGLE	A1
LDW280-17331 *17	PLATE	

CHG NO.

NAS 9-1100

2

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	X	DESCRIPTION OF EO
REASON FOR EO: DESIGN CHANGE FOR LEM-1						O N * N/A FOR LEM-1 WAS LDW 280-25537

S. H. GAEC EO RELEASE: MPTC 3/14/66; AE 3/14/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG ✓	RECORD EO	DISPOSITION OF PARTS	APPROVED BY							
						REWORK	SCRAP	DATE	2/9/66	2/11/66		2/26/66	—	—	3/14/66	3/14/66
LEM		LEM-1 (31)							VDI	SUPPORT WE [illegible]	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	EO NO.
				PRIORITY C		DRAWING TITLE: NOTED						DRAWING NO. LEO 280				73

ISSUED BY A. RICHER K1153 / J. STRAKOSCH SECTION VDI GROUP NO. 280 PL

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEER'NG ORDER

ENG 22.2 REV 3-65

DWG. NO. LEO 280 | EO NO. 89
CONTROL INFO NO. LDW280-5898

ON THE FOLLOWING DRAWINGS FOR ALL DASH NUMBERS THAT NEXT ASSEMBLE ON LDW280-25539 CHANGE N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QUANTITIES REMAIN SAME

DWG No	CHANGE No	TITLE
LDW280-17306	A1	SEE DRAWINGS
LDW280-17278	B2	
LDW280-17277	B2	
LDW280-17221	A2	
LDW280-17219	A2	
LDW280-17175	A2	
LDW280-17174	A1	
LDW280-17169	A1	
LDW280-17167	A4	
LDW280-17139	B3	
LDW280-17408	A1	
LDW280-17407	A2	
LDW280-17400	A2	
LDW280-17356	A3	
LDW280-17355	A1	
LDW280-17348	A4	
LDW280-17344	A3	
LDW280-17341	B2	
LDW280-17329	A2	
LDW280-17328	A1	
LDW280M17342	A1	
LDW280M17247	B1	
LDW280M17139	B1	
LDW280M17115	B1	
LDW280M17110	B4	
LDW280-17448	A1	
LDW280-17450	A2	
LDW280-17447	A1	
LDW280-17445	A1	
LDW280-17439	A1	
LDW280-17410	A3	SEE DRAWINGS

NAS 9-1100

2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: CREATE N/A TO ACCOMMODATE LINE RUN

DESCRIPTION OF EO: FOR ALL DASH NUMBERS THAT NEXT ASSEMBLED ON LDW280-25539 CHANGED N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QTY REMAIN SAME

GAEC EO RELEASE: MPTG 4/6 | STR 4-4

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO

DISPOSITION OF PARTS: NOT REWORK | REQD SCRAP

APPROVED BY	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG	OMP
DATE						
4/3 WBM 4/4 VDI			FEB 4/21/66		4-4	4-13-66

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO 280

EO NO.: 89

ISSUED BY A. MEVORAH/J. STRAKOSCH SECTION VDI GROUP NO. 335 PL 35

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LE0280 | EO NO. 160
CONTROL INFO NO. LDW280-7884

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED* - RESTRICT N/A LDW280-23531 TOLTA-3(13) ONLY
ADD N/A LDW280-52531 FOR LEM-2(32) & LEM-3(33)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17131-13	B4	WEB
-17164-11	A3	CLIP
-17191-11	B1	STIFFENER
-17191-12		STIFFENER
-17192-17	B1	DOUBLER
-17193-11	A3	ZEE
-13		
-17193-15		ZEE
-17194-21	A2	ANGLE
-23		
-17199-25		
-17195-21	C2	
-23		
-25		
-17195-27		ANGLE
-17201-13	A2	STIFFENER
-17253-11	A1	ANGLE
-13		
-17253-15		
-17254-11	B2	
-13		
-15		
-17		
-17254-19		ANGLE
-17278-15	C1	ZEE
-17278-19		CLIP
-17341-13	C1	DOUBLER
-17345-11	B1	ANGLE
-17349-11	B1	DOUBLER
-17400-11	B1	CLIP
-17607-11	A1	SPLICE
-17607-13		
-17608-11	B3	
-13		
-15		
-17608-17		
-17611-21	B1	
LDW280-17611-23		SPLICE

DRAWING #	CHANGE #	TITLE
LDW280-17619-11	A2	SPLICE
-17687-11	A2	ANGLE
-17730-11	A1	CLIP
-17738-11		PLATE
-13		CLIP
-14	A1	
-15		
-16		
-17		
-18		
-19		
-17738-20		CLIP
-17740-19	A2	ANGLE
-17741-13		
LDW280-17741-15	A1	ANGLE
LDW280M17186-1	A2	SUPPORT
M17228-8	C1	
M17229-8	C2	SUPPORT
M17260-1	A1	ANGLE
M17285-1	A3	SUPPORT
M17408-2	B4	CAP STRIP
M17417-4	C3	CAP STRIP
M17419-7	C1	PIN
M17440-1	A2	FITTING
LDW280M17602-1	B1	WASHER

*USE APPLICABLE DASH NO IN DESCRIPTION OF E.O.

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: ADDITION OF AMBIENT He TANK

DESCRIPTION OF EO: FOR -* N/A WAS LDW280-23531 EFF LTA-3 LEM-2 & 3
ADDED N/A LDW280-52531 FOR LEM-2 & 3

GAEC EO RELEASE: LE 7-13-66; MAT'L 7-13-66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-2(32)	
LEM		LEM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: NOT REQD; REWORK; SCRAP

APPROVED BY	DATE	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	QUAL
[illegible]	6/30								

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LE0.280
EO NO.: 160

ISSUED BY: T. BACKOFEN / F. STRAKOSCH SECTION: VEHICLE DESIGN GROUP NO.: 245 PL: 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENO 32.2 REV 3-65

DWG. NO. LE0280		EO NO. 161
CONTROL INFO NO. LDW280-7917		

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED* RESTRICT N/A LDW280-25531 TO LTA-5(15) ONLY
ADD N/A LDW280-28531 FOR LTA-8(18) & LEM-1(31)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17131-11	B5	WEB
-17164-11	A4	CLIP
-17191-11	B2	STIFFENER
-17191-12		STIFFENER
-17192-17	B2	DOUBLER
-17193-11	A4	ZEE
-15		
-17193-17		ZEE
-17194-11	A3	ANGLE
-13		
-21		
-23		
-17194-25		
-17195-21	C3	
-23		
-25		
-27		
-17195-29		ANGLE
-17201-13	A3	STIFFENER
-17253-11	A2	ANGLE
-13		
-17253-15		
-17254-11	B3	
-13		
-15		
-17		
-17254-19		
-17277-11	C1	
-13		
-15		
LDW280-17277-17		ANGLE

DRAWING #	CHANGE #	TITLE
LDW280-17278-15	C2	ZEE
-17278-19		CLIP
-17331-11	A2	PLATE
-17331-13		ANGLE
-17331-15		ANGLE
-17341-13	C2	DOUBLER
-17345-11	B2	ANGLE
-17346-17	B1	
-18		
-21		
-23		
-25		
-27		
-17346-28		ANGLE
-17349-11	B2	PLATE
-17400-11	B2	DOUBLER
-17409-11	A1	CLIP
LDW280 -17409-13		DOUBLER
LDW280-17443-17	A5	DOUBLER
LDW280M17108-4	D1	STIFFENER
M17138-5	D1	CAP STRIP
M17154-1	B1	ANGLE
M17186-1	A3	CAP STRIP
M17226-1	B1	SUPPORT
M17226-3		ANGLE
M17228-8	C2	ANGLE
M17229-8	C3	SUPPORT
M17260-1	A2	SUPPORT
LDW280M17285-1	A4	ANGLE
		SUPPORT

TO

NAS 9-1100

* USE APPLICABLE DASH No IN DESCRIP OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: ADDITION OF AMBIENT He TANK

FOR-* DESCRIPTION OF EO: N/A WAS LDW280-25531 EFF LTA-5,8 & LEM-1
ADDED N/A LDW280-28531 FOR LTA-8 & LEM-1

GAEC EO RELEASE: R LE 7-13-66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	
LEM		LEM-1(31)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: NOT REWORK	HELD SCRAP

APPROVED BY	DATE	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	QUALITY
	6/15/66					wjk 6/16			7-2-66

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LE0280	161

PREPARED BY J. Backofen / J. STRAKOSCH SECTION VEHICLE DESIGN GROUP NO. 335 PL 35

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENG 32.2 REV 3-65 **ENGINEERING ORDER**

DWG. NO. LEO 280		EO NO. 162
CONTROL INFO NO. LDW 280-8031		

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED *-RESTRICT N/A LDW 280-25524 TO LTA 5(15) ONLY
ADD N/A LDW280-28524 FOR LTA 8(18) & LEM 1(31)
QUANTITIES REMAIN THE SAME

DWG No	CHG NO	TITLE
✓LDW280M17471 -4	A1	FITTING
LDW280M17471 -3		FITTING
✓LDW280M17230 -6	C4	STIFFENER
LDW280M17230 -5		STIFFENER
✓LDW280M17141 -3	C4	FITTING
✓LDW280M17140-2	B1	↕
LDW 280M17140 -1		
✓LDW 280M17136 -5	C4	FITTING
✓LDW280M17118- 1	C1	CAPSTRIP
✓LDW280M17113 -4	D5	CAPSTRIP
✓LDW 280M17105-17	E2	CORNER POST
✓LDW280M17104 -6	E2	CORNER POST
✓LDW280-17617 -15	B3	PLATE
LDW280- 17614 -15	B2	PLATE
LDW 280- 17446 -11	A1	PAD
LDW 280-17429 -13	A5	DOUBLER
LDW 280- 17429 -11		ZEE
LDW 280 - 17351 -17	A1	STIFFENER
LDW 280 - 17351 -15		STIFFENER
LDW 280-17341 -13	C3	DOUBLER
LDW 280-17196 -11	B2	TEE
LDW280- 17154 -12	A4	STIFFENER
LDW 280-17154 -11		STIFFENER
LDW 280-17152 -17	B1	PLATE
↕ -14		ANGLE
-13		↕
-12		
LDW 280-17152 -11		ANGLE
LDW 280 -17150 -19	C1	CLIP
LDW 280 -17150 -12		CLIP
LDW 280-17150 -11		CLIP
LDW 280-17148 -14	B1	ANGLE
↕ -13		↕
-12		
LDW 280- 17148 -11		
LDW 280-17147 -18	C1	
↕ -17		
-16		
-14		
-13		
LDW 280-17147 -11		
LDW 280-17146 -26	C1	
↕ -25		
-24		
-23		
-20		
LDW280-17146 -19		ANGLE
LDW 280-17124 -17	B5	WEB
LDW 280-25516 -5	B1	TRUSS INSTL

*USE APPLICABLE DASH No IN DESCRIPTION OF E.O.

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: ADDITION OF AMBIENT HE TANK

DESCRIPTION OF EO: FOR-* N/A WAS LDW280-25531 EFF LTA-5,-8 & LEM-1 ADDED N/A LDW280-28524 FOR LTA 8(18) LEM 1(31)

GAEC EO RELEASE: IE 7/13

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
						Not Affd								
								DATE 6.15.66				7/1/66	7/2/66	
								VDF						
LEM		LEM 1(31)		PRIORITY C	DRAWING TITLE: NOTED			DRAWING NO.: LEO 280						EO NO. 162
LEM		LTA 8(18)												

ISSUED BY AMBROSIO X 1156 SECTION VEH DES INT GROUP NO. 335 PL 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LE0280 | EO NO. 164
CONTROL INFO NO. LDW280-7871

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED *
-RESTRICT N/A LDW 280-23524 TO LTA-3(13) ONLY
ADD N/A LDW 280-52524 FOR LEM-2(32) & LEM-3(33)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
(R) LDW 280-17124-19	C2	WEB
-23516-6	C2	TRUSS INST'L.
-17695-11		ANGLE
-12	B3	
-13		
-17695-19		
-17696-11		
-12	B4	
-13		
-14		
-15		
-17696-18		ANGLE
-17697-16	A3	ZEE
-17698-15	A1	ZEE
-17624-11		ANGLE
-12	A3	
-13		
-14		
-15		
-17624-16		ANGLE
-17150-11	C2	CLIP
-17150-12		CLIP
(R) -17341-13	C4	DOUBLER
-17699-13		PLATE
-15	A5	PLATE
-19		CLIP
LDW 280-17699-20		CLIP

DRAWING #	CHANGE #	TITLE
(R) LDW 280-17613-11		SPLICE
-13	A4	
-17613-15		SPLICE
-17154-11	A5	STIFFENER
-17154-12		STIFFENER
-17196-11	B3	TEE
-17659-15	A1	STIFFENER
-17659-17		STIFFENER
-17429-11	B1	ZEE
-17429-13		DOUBLER
-17614-17	B3	SPLICE
-17614-18		
-17617-13	B4	
LDW 280-17617-19		SPLICE
LDW 280M17409-7	C3	CORNER POST
M17405-5	C3	CORNER POST
M17113-4	E1	UPPER CAP
M17418-1	C3	LOWER CAP
M17136-5	C5	FITTING
M17470-3	B4	FITTING
M17230-7	C5	STIFFENER
M17230-8		STIFFENER
M17325-1	B1	FITTING
(R) LDW 280M17325-2		FITTING

(R) CHANGE REVISED BY LEO 280-181

* USE APPLICABLE DASH NO IN DESCRIPTION OF E.O.

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: ADDITION OF AMBIENT He TANK

DESCRIPTION OF EO: FOR -* N/A WAS LDW 280-2353, EFF: LTA-3, LEM-2 & -3
ADDED N/A LDW 280 52524 FOR LEM-2 & -3

(R) GAEC EO RELEASE: 7/6/66 1-1-66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-2(32)-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK | SCRAP: NOT REQD
APPROVED BY / DATE: VDJ 6/1/66 | SUPPORT | RELIAB. GROUP | GROUP LEADER | STRESS GROUP 6/30 | LIAISON ENGRG | PROJ. ENGRG 7/6/66 | CONT
PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 164

ISSUED BY J. BACKOFEN / J. STRAKOSCH SECTION VEHICLE DESIGN GROUP NO. 335 PL 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO280 | EO NO. 541
CONTROL INFO NO. LDW280A 6132

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	AG
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ | CL II ENGRG CHG | ✓ | CL I ENGRG CHG | LCD19-1242 | 2

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R	(46)

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REWORK | SCRAP
APPROVED BY: DATE 3/29/67 | 5 | YDI | SUPPORT | RELIAB GROUP
GROUP LEADER 3/28/67 | STRESS GROUP 4/3/67 | LIAISON ENGRG 3/30/67 | PROJ ENGRG 4/4/67
PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 541

ISSUED BY G. BECKER/J. STAKOSCH X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-17341 | EO NO. D3
CONTROL INFO NO. LDW280B1432

FOR -11 & -23
REMOVE NEXT ASSY LDW280-23577

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG
	✓	

(5)

REASON FOR EO: TO AGREE WITH N/A (CDR LIST)

DESCRIPTION OF EO: FOR -11 & -23 REMOVED NEXT ASSY LDW280-23577

(R) GAEC EO RELEASE: 1/C 2/5/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3 (13) LTA-3 D/R (14)	
LM		LM-2 (32) THRU	
LM		LM-15 (45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
			✓

PRIORITY: C

DOUBLER - DRAWING TITLE D/S PROPELLANT TANK SUP.

APPROVED BY	DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
[illegible]	1/17/68	VDI		1-17-68	1-19-68	1/17/68	2-5-68

DRAWING NO. LDW280-17341 | EO NO. D3

ISSUED BY ROESSLER / THORJUSEN x1153 SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO.	LDW280-17341		EO NO. D4
CONTROL INFO NO.	LM-2-4610		

IN FLD/DWG, B/M & MODEL BLOCK REINSTATE -11 & -23
FOR NEXT ASSY LDW280-23634 1 EA REQD/MODULE
EFF LTA-3(13), LM-3(33) THRU LM-15(45) & LTA-3D/R(46)

[NOTE: -11 & -23 WERE REMOVED FROM DRAWING BY EO-D3 WHICH DELETED INCORRECT NEXT ASSY OF "LDW280-23577]"

DETAIL SPEC REQ | CL II ENGRG CHG | ✓ CL I ENGRG CHG |

REASON FOR EO: TO AGREE WITH NEXT ASSY REQUIREMENTS

DESCRIPTION OF EO: IN FLD/DWG, B/M & MOD/BLK REINSTATED -11 & -23 FOR NEXT ASSY LDW280-23634

(2) GAEEC EO RELEASE: VK 03025

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3(13) LM-3(33) THRU LM-15(45) LTA-3D/R(46)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO

DISPOSITION OF PARTS: NOT REWORK | REQD SCRAP

APPROVED BY							
DATE			2	4/15/68	4/24/68	4/26/68	4-8-68
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY: C

DRAWING TITLE: DOUBLER-DESCENT STAGE PROPELLANT TANK SUPPORT

DRAWING NO.: LDW280-17341

EO NO.: D4

ISSUED BY LIAISON J. MALONEY 3/26/68 X3604 SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65 **ENGINEERING ORDER**

DWG. NO. LEO 280		EO NO. 952
CONTROL INFO NO. LDW280B3370		

FOR THE FOLLOWING PARTS ADD TM-5/R(65)REQMT'S
N/A LDW280-23634 FOR QUANTITIES NOTED:

DRAWING NO.*	TITLE	REQ'D/MOD	CHANGE NO.
LDW280-17719-17		1	B5
-17719-18		1	
-18350-11		1	A4
-18350-12		1	
-17341-11		1	D5
LDW280-17341-23	SEE DWG	1	

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	X LCD 3075 CCA 586 PKG 2R (5)

REASON FOR EO: ADD TM-5(65)REQMTS.

DESCRIPTION OF EO: ON — * ADDED TM-5/R(65)REQMTS

GAEC EO RELEASE: VK 5/16/68

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		TH-5/R(65)	

DRAWING CHANGE REQD: ✓ REVISE DWG; RECORD EO

DISPOSITION OF PARTS: NOT REQ'D; REWORK; SCRAP

APPROVED BY: GAS; VDI; SUPPORT; RELIAB. GROUP

DATE: 5/13/68

GROUP LEADER: 5-13-68 W/H

STRESS GROUP: 5-13-68

LIAISON ENGRG: 5/13/68

PROJ ENGRG: 5/14/68

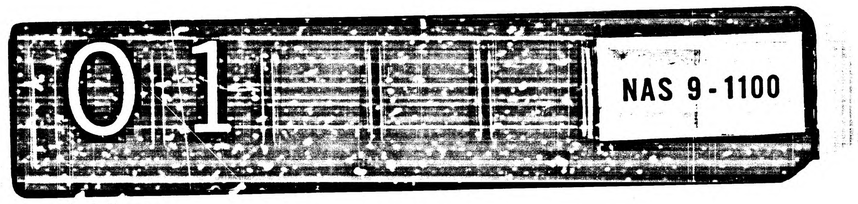
PRIORITY: C

DRAWING TITLE: SEE DRAWING

DRAWING NO.: LEO 280

EO NO.: 952

5-17-68 ISSUED BY T.COTTER x3352/PTHORJUSEN SECTION VD1 GROUP NO. 335 PL 25



GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1374
CONTROL INFO NO. LDW280B7394

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17323 ✓	B3	SEE DWG
-17327 ✓	B4	
-17330 ✓	E1	
-17337 ✓	D1	
-17341 ✓	E1	
-17343	C3	
-17344	B3	
-17347	B3	
-17348	C4	
LDW280-17349	C1	SEE DWG

* APPLICABLE DASH NOS

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. 8 CCA 1821 (S)

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM *

EFFECTIVITY: MODEL LM; PROCURING ACTIVITY NO.; GAEC UNIT NO. LM-15(45); SUB CONTR UNIT NO.

DRAWING CHANGE REQD: ✓ REVISE DWG; RECORD EO

DISPOSITION OF PARTS: REWORK; ✓ SCRAP

APPROVED BY / DATE: VDI; SUPPORT; RELIAB GROUP; GAEC EO RELEASE: 4-24-69; GROUP LDR.; ENGRG GROUP; LIAISON ENGR.; PROJ ENGINEER; QUAL. ENGR.

PRIORITY C

DRAWING TITLE: SEE DWG

DRAWING NO. LEO 280

EO NO. 1374

ISSUED BY MEVORAH / THORTJSEN X86016 SECTION VEH DES INT GROUP NO. 335 * 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1541
CONTROL INFO NO. LDW 280B 8079

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40) [redacted]
ADD LTA-11 ([redacted]23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING Nº *	TITLE	CHANGE Nº
LDW280-17337	SEE DWG	D2
341		E2
343		C4
344		B4
347		B4
348		C5
349		C2
356		B4
362		B6
LDW280-17327	SEE DWG	B5

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG ✓ LCD 3890 PKG 99 Pg 3-445 & 96 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: 8-8-69 | 8-9-69 | 8-9-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11([redacted])	
		(23)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: NAT | REP'D | REWORK | SCRAP

APPROVED BY							
DATE	7-29-69		8-1-69	N 8-2-69			
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO: LEO 280
EO NO. 1541

8-12-69 ISSUED BY G. HANSMANN X87222 (ML) SECTION VDI GROUP NO 335 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO 280 | EO NO. 1659
CONTROL INFO NO. LDW280B8312

FOR THE FOLLOWING DWGS & DASH Nos LISTED BELOW.
REMOVE LM-10(40) THRU LM-19(44) & LTA-11(23) EFF FOR THE NOTED N/A.

	DWG & PART No (*)	TITLE	NEXT ASSEMBLY (*-*)	QTY	CHANGE No
✓	LDW280 M17420-1	SEE DWG	LDW280-54528	1	B2
	M17420-2		-23530	1	
✓	M17456-1,2		-23529	1 EA	A5
	M17456-1,2		-23532	1 EA	
✓	M17458-1		-23536	1	A6
	M17458-2		-23539	1	
✓	M17459-2-1		-54531	1	A8
	M17459-1-1		-54533	1	
✓	M17460-1		-54534	1	A7
	M17460-1		-54537	1	
✓	-1763 4-17		-23529	2	A5
	-1763 4-17		-23532	2	
✓	-17193-15		-54531	1	B5
	-17341-11		-23634	1	
	-17341-13		-54531	1	
	-17341-13		-23530	2	
✓	-17341-19		-23536	2	E3
	-17341-19		-23539	2	
	-17341-21		-54526	2	
	-17341-21		-54527	2	
	LDW280-17341-25	SEE DWG	LDW280-54528	1	

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG 97 PG 2 of 3 (5)

REASON FOR EO: PROP TANK BEAM PANEL SAT STRUCTURE MODIFIED FOR INCREASED TANK LOADS

DESCRIPTION OF EO: FOR (*). REMOVED LM-10(40) THRU LM-14(44) & LTA-11(23) EFF FOR N/A (*-*).

GAEC EO RELEASE: Date 8-22-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR. UNIT NO.
LM		LM-10(40)	
LM		THRU	
LM		LM-14(44) & LTA-11(23)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK | SCRAP ✓

PRIORITY: C

DRAWING TITLE: SEE DWGS

DRAWING NO.: LEO 280

EO NO.: 1659

	APPROVED BY	DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
	RBT	8-16-69	VD1		9/16/69	9/18/69	9-3-69	

CDR 9/8/69
ISSUED BY: M. SHAPIRO x84606 SECTION: VD1 GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO 280		EO NO. 1679
CONTROL INFO NO. LDW280B 8463		

FOR THE FOLLOWING DWGS & DASH NOS:*
REVISE N/A LDW280-60534 FOR LM 10 (40) THRU 14(44), LTA 11(23)
(WAS) N/A LDW280-54534 FOR LM 10 (40) THRU 14 (44), LTA 11(23)
& ADD LTA3DR/1 (460) N/A LDW280-60534. QUANTITY SAME AS FOR LM-10(40) THRU LM-14(44)

* DWG NO	DASH NO.	TITLE	CHG. NO.
LDW280-17354	-11	SEE DWG	C3
-17430	-17		B6
-17600	-15		B8
-17601	-19 -21		B7
-17341	-21		E4
-17278	-19		E7

DWG. NO.	DASH NO.	TITLE	CHG. NO
LDW280-17608.	-11 -19 -21 -23	SEE DWG.	C7
-17618	-11 -13		B5
-17619	-11		B6
-17705	-23		A7
-17730	-11		A6

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LCD 3994 DK64	(5)

REASON FOR EO
REDESIGN OF FWD BEAM PANEL FOR WATER, MESA, & GOX SUPPORT

DESCRIPTION OF EO
FOR * N/A LDW280-60534 & WAS LDW280-54534 FOR LM 10 (40) THRU LM 14 (44) & LTA-11 (23) & ADDED LTA 3DR/1 (460) EFF.

GAEC EO RELEASE: VK 9/19/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM10(40) THRU 14(44)	
LM		LTA 11 (23)	
LM		LTA3DR/1 (460)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: REWORK; SCRAP ✓
PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 1679

APPROVED BY							
DATE	9/10/69			9/10/69	9/10/69	9/19/69	9/19/69
	VD1	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

CDR 09 1969
ISSUED BY DON RAGAS x86046 SECTION VD1 GROUP NO. 280 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LOW280-17341 | EO NO. E5

CONTROL INFO NO. LOW280B9066

FOR-21 N/A LOW280 54537 S/B LOW280 60537. 1 REQ'D/MOD S/B 2 REQ'D/MOD FOR LM-10(40) THRU LM-14(44), LTA-11(23) & ADD LTA-3 DR/1 (460). N/A LOW280-60537, 2 REQD/MOD.

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCO 3994 ARG 65

REASON FOR EO: BATTERY RELOCATED TO AFT BULKHEAD

DESCRIPTION OF EO: FOR-21 N/A LOW280 60537 (WAS LOW280 54537) 2 REQ'D/MOD (WAS 1 REQ'D/MOD) FOR LM-10(40) THRU LM-14(23) & LTA-11(23) & ADDED LTA-3 DR/1 (460) REQMTS.

EO GAEC RELEASE: 10-7-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-10(40)	THRU LM-14(44) &	
	LTA-11(23)	& LTA-3 DR/1 (460)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY: DATE 11/6/69 | VDI

SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
		10-7-69	10/6/69		10/7/69

PRIORITY: C

DRAWING TITLE: DOUBLER - PROP TANK

DRAWING NO.: LOW280-17341

EO NO.: E5

100769

ISSUED BY PAT GARAHAN / GUS HANSMANN X87223 SECTION VEH DES INT X87222 GROUP NO. 335 PL 25

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NAS 9-1100

LEM	LDW280-25533	LEM-1(31)	1
LEM	LDW280-25533	LTA-5(15)	1

PART NO. LDW280-17343-19

LEM	LDW280-25533	LEM-6(36)	1
	LDW280-25533	LEM-5(35)	1
	LDW280-25533	LEM-4(34)	1
	LDW280-25533	LEM-3(33)	1
	LDW280-25533	LEM-2(32)	1
LEM	LDW280-25533	LTA-3(13)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17343-17 | GAEC SCH NO.

LEM	LDW280-25533	LTA-8(18)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17343-15 | GAEC SCH NO.

LEM	LDW280-23533	LEM-6(36)	1
	LDW280-23533	LEM-5(35)	1
	LDW280-23533	LEM-4(34)	1
	LDW280-23533	LEM-3(33)	1
	LDW280-23533	LEM-2(32)	1
	LDW280-23533	LTA-3(13)	1
	LDW280-25533	LEM-1(31)	1
	LDW280-25533	LTA-8(18)	1
LEM	LDW280-25533	LTA-5(15)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17343-11 | GAEC SCH NO. 51.4

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00					
REV	B	B	B	B					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED

LAST DASH NO. USED: -19

GRUMMAN REL'E INFO B: PRIM NO. LE(001) 207 A1/2

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS — DECIMALS — ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100 | LINE ITEM # 1 | DOCUMENTATION TYPE II

DRAWN BY	HERB SCHWETER 11/23/65	RELIABILITY	
LAYOUT BY	FRANK MADDEN		
CHECKED BY	D. FASSI 12-7-65		
GR LEADER	[illegible] 12/9/65		
VEH DES INT	[illegible] 12/17/65		
STRUCTURES	[illegible] 11/8/65		
STRUCTURES	[illegible] 1-19	PROJ ENGR	[illegible] 12/31/65
WEIGHTS		REL GR	[illegible] 2/1/66

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

ZEE
DESCENT STAGE - LH AFT
BEAM PANEL

SIZE	CODE IDENT NO.		
B	26512	LDW280-17343	B

SCALE NONE | SHEET 1 OF 4

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1, 1.10, 2 & 3						EO A1	LDW 280-17343-13 REPLACED BY LDW 280-17343-15. ADDED SHEET 1.10 SHEET 1 OF 4 WAS SHEET 1 OF 3.	LTA-3,5,8 LEM-1;2;3-4, -5 & -6		-13	SVOBODA 5-12-66		
	2	1, 1.10, 2 & 3					✓	EO A2 ®	ADD -17, REVISED -11 EDGE TRIM, REMOVED NEXT/ASS'Y & EFFECTIVITY -15 LDW 280-23533, LTA-3(13), LEM 2(32) THRU LEM-6(36). NEXT/ASS'Y & EFFECTIVITY -15 LDW 280-25533, LTA-5,-8 & LEM-1.	LTA-3;5,-8 LEM-1,-2,-3, 4;5 & -6	-11	-15			
B	1	1.00, 1.10, 2.00 & 3.00	5A 8A				✓	E.O. B1	REWORKED -17, ADDED -19, FOR -15 REMOVED THE FOLLOWING EFFECTIVITIES. LEM-1 (31) & LTA-5 (15)	LTA-3,-5,-8 LEM-1 THRU-6	✓		NISBET 8-26-66		

FOR CONTINUATION OF REVISIONS SEE SHEET _____

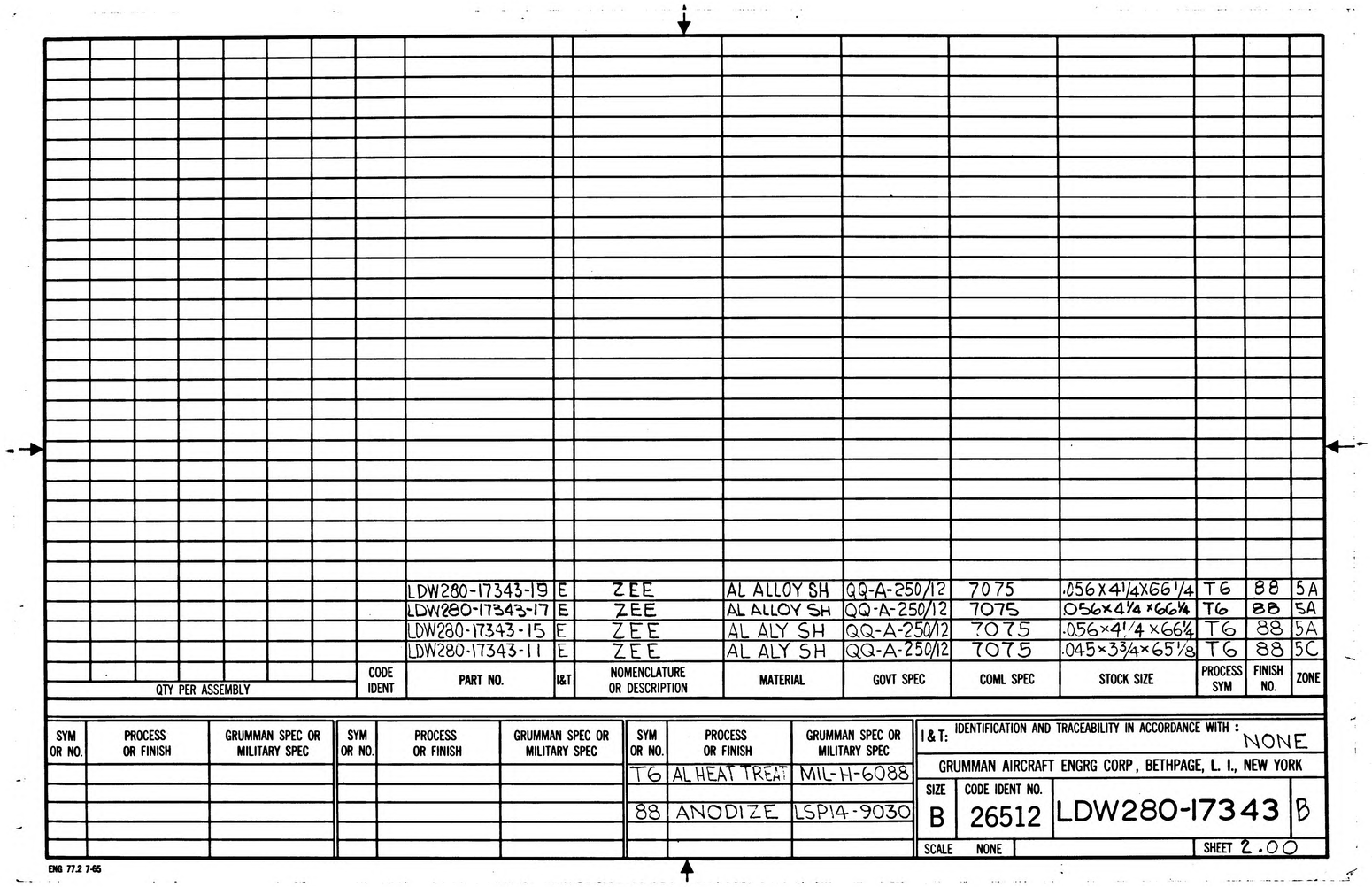
ENG 77.3 5-65

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17343	B
SCALE NONE			SHEET 1.10

01

NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17343-19	E	ZEE	AL ALLOY SH	QQ-A-250/12	7075	.056 X 4 1/4 X 66 1/4	T6	88	5A
		LDW280-17343-17	E	ZEE	AL ALLOY SH	QQ-A-250/12	7075	.056 X 4 1/4 X 66 1/4	T6	88	5A
		LDW280-17343-15	E	ZEE	AL ALY SH	QQ-A-250/12	7075	.056 X 4 1/4 X 66 1/4	T6	88	5A
		LDW280-17343-11	E	ZEE	AL ALY SH	QQ-A-250/12	7075	.045 X 3 3/4 X 65 1/8	T6	88	5C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17343	B

SCALE NONE SHEET 2.00

ENG 77.2 7-65

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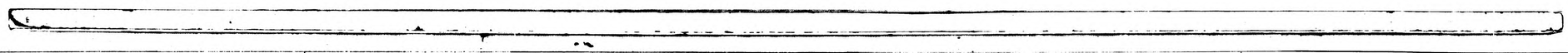
NAS 9-1100



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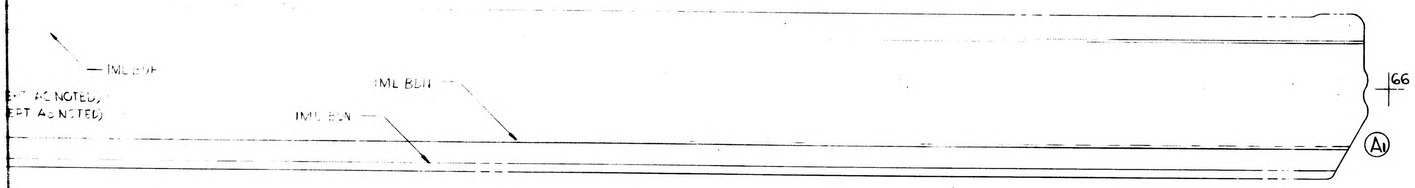
25

NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.

66



MANUFAC
UNLESS O
NOTES CALLED

AND ALL OTHER M
IN REGION MARKED

FILLET AND INSIDE
RADII TOLERANCES
.01R TO .06
.06R TO .25
OVER .25R

DEPTH SHOWN FO
HOLES IS FULL TH
BEYOND PERMISSI

EXTERNAL THREAD
SHOWN INCLUDES
2 IMPERFECT THR

DO NOT CADMIUM
HOLES OR SURFAC
WITH DOUBLE AST

MISMATCH STEP O
PERMISSIBLE DUE
OF CUTTERS AT
INTERSECTING SUR

DIAMETERS MARK
MUST BE CONCEN

READING

HOLES MUST BE
CHROME PLATING

ALL DIMENSIONS
AFTER CADMIUM P
THICKNESS OF PL
TO .0001 MAX M
BE .0002 ON THR
NO ALLOWANCES
HOLES

125 SURFACE
INCLUDIN
PER MIL

200 FOR ALL

REMOVE ALL BUR
BREAK ALL EDGES

INSPECTION INFO
MINIMUM PERMIS
AVERAGE EDGE DI
MARKED

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TO BE MACHINED

UNLESS OTHERWI
TOLERANCE ON FI

LENGTHS OF AN
RIVETS SHORTER
NOT SPECIFIED

TOLERANCE ON L
DELINEATIONS IS

02/03 NAS 9-1100

CODE IDENT NO. 26512
LDW280-17343 SH 3

LEM

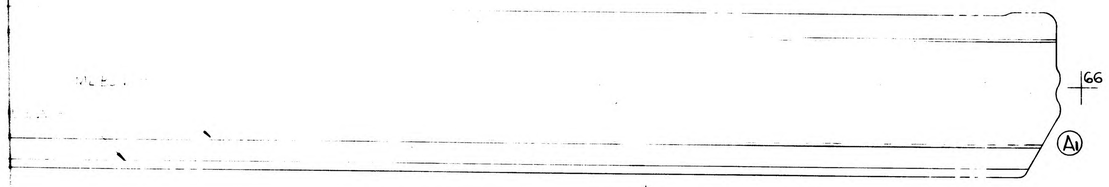
GRUMMAN AIRCRAFT ENGRG CORP. BETH

SIZE	CODE IDENT NO.	LDW28
H	26512	

SCALE FULL

FOR PHOTO REPRODUCTION

NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.



MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG	
PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .018R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF = .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL $\sqrt{}$ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS = 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1.30	✓

DWG SIZE 28 C

PRINTING INFO ONLY
FULL SIZE SHEET AREA 936.75 = 20 SQ FT
½ SIZE SHEET AREA (½ OF FULL) = 5 SQ FT
PRINT TRIM LINE

LDW280-17343 B

LDW280-17343 A

03/03 NAS 9-1100

CODE IDENT NO. 26512
LDW280-17343 SH 3

LEM

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I. NEW YORK

SIZE	CODE IDENT NO.	LDW280-17343	B
H	26512		

SCALE FULL SHEET 3.00

FOR PHOTO REPRODUCTION

ENG 736 644

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A5132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

NAS 9-1100

DETAIL SPEC REQ | CL II ENGRG CHG | ✓ CL I ENGRG CHG | LCD19-1242 | 2 C

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

(B) GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R (46)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: NOT REWORK | SCRAP

APPROVED BY / DATE: 5 VDI | SUPPORT | RELIAB GROUP | GROUP LEADER 3/8/67 | STRESS GROUP 3/8/67 | LIAISON ENGRG 3/30/67 | PROJ ENGRG 4/4/67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 541

ISSUED BY G. BECKER/J. STAKISCH X1155 SECTION YDI GROUP NO. 335 PL 25

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 1374
CONTROL INFO NO. LDW280B7394

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17323 ✓	B3	SEE DWG
-17327 ✓	B4	
-17330 ✓	E1	
-17337 ✓	D1	
-17341 ✓	E1	
-17343 ✓	C3	
-17344	B3	
-17347	B3	
-17348	C4	
LDW280-17349	C1	SEE DWG

* APPLICABLE DASH NOS

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. 8 CCA 1821 (5)

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM -*

EFFECTIVITY: MODEL LM; PROCURING ACTIVITY NO.; GAEC UNIT NO. LM-15(45); SUB CONTR UNIT NO.

DRAWING CHANGE REQD: ✓ REVISE DWG; RECORD EO; DISPOSITION OF PARTS: REWORK; ✓ SCRAP

APPROVED BY / DATE: VDI; SUPPORT; RELIAB. GROUP; PBT 4-26-74; W&H; GROUP LEADER; TYPE ES GROUP; LIAISON ENGRG; PROJ; GAEC EO RELEASE

PRIORITY: C

DRAWING TITLE: SEE DWG

DRAWING NO.: LEO 280

EO NO. 1374

PS 2869 ISSUED BY: MEVORAH / THORJUSEN X86096 SECTION: VEH DES INT GROUP NO. 335 - 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-68

ENGR. NO. LEO 280 | EO NO. 1541
CONTROL INFO NO. LDW 280B 8079

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (4Q) [redacted]
ADD LTA-11 ([redacted]23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING NO *	TITLE	CHANGE NO
LDW280-17337	SEE DWG	D2
341		E2
343		C4
344		B4
347		B4
348		C5
349		C2
356		B4
362		B6
LDW280-17327	SEE DWG	B5

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | √ LCD 3890 PKG 99 PG 3-4 & 5 & 6 (5)

REASON FOR EO
NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO
ON * ADDED LTA-11 (23) REQ'MTS

GAEC EO RELEASE: [redacted] 8-8-69; VR 8/8/69; [redacted] 8-9-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11([redacted]) (23)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: NAT; REQ'D; REWORK; SCRAP

	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
	[redacted]	7-29-69			8/8/69	N 8-2-69		8-9-69
		VDI						

PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO: LEO 280
EO NO: 1541

8-12-69 ISSUED BY G. HANSMANN X87222 (MAL) SECTION VDI GROUP NO 335 PL 25

01

NAS 9-1109

LEM	LDW280-25539	LEM-1(31)	1 EA
	LDW280-28539	LTA-8(18)	1 EA
	LDW280-28539	LTA-8(18)	1 EA
	LDW280-23539	LEM-6(36)	1 EA
		LEM-5(35)	1 EA
		LEM-4(34)	1 EA
		LEM-3(33)	1 EA
		LEM-2(32)	1 EA
	LDW280-23539	LTA-3(13)	1 EA
	LDW280-25533	LEM-1(31)	1 EA
	LDW280-25533	LTA-8(18)	1 EA
	LDW280-25533	LTA-5(15)	1 EA
	LDW280-23533	LEM-6(36)	1 EA
		LEM-5(35)	1 EA
		LEM-4(34)	1 EA
		LEM-3(33)	1 EA
		LEM-2(32)	1 EA
LEM	LDW280-23533	LTA-3(13)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17344-13 & -14		GAEC SCH NO.	

LEM	LDW280-28539	LTA-8(18)	1 EA
PART NO. LDW280-17344-17 & -18			
LEM	LDW280-25533	LEM-1(31)	1 EA
	LDW280-25533	LTA-8(18)	1 EA
	LDW280-25533	LTA-5(15)	1 EA
	LDW280-23533	LEM-6(36)	1 EA
		LEM-5(35)	1 EA
		LEM-4(34)	1 EA
		LEM-3(33)	1 EA
		LEM-2(32)	1 EA
LEM	LDW280-23533	LTA-3(13)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17344-15 & -16		GAEC SCH NO. 51-4	

LEM	LDW280-28539	LTA-8(18)	1 EA
	LDW280-23539	LEM-6(36)	1 EA
		LEM-5(35)	1 EA
		LEM-4(34)	1 EA
		LEM-3(33)	1 EA
		LEM-2(32)	1 EA
	LDW280-23539	LTA-3(13)	1 EA
	LDW280-25533	LEM-1(31)	1 EA
	LDW280-25533	LTA-8(18)	1 EA
	LDW280-25533	LTA-5(15)	1 EA
	LDW280-23533	LEM-6(36)	1 EA
		LEM-5(35)	1 EA
		LEM-4(34)	1 EA
		LEM-3(33)	1 EA
		LEM-2(32)	1 EA
LEM	LDW280-23533	LTA-3(13)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17344-11 & -12		GAEC SCH NO. 51-4	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1	10	2		3				
REV	A	A	A		A				
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	
LAST DASH NO. USED	-18

GRUMMAN REL INFO/A

PRIM NO.	VE(001)		
207	PP10		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS9-1100 | LINE ITEM # 1 | DOCUMENTATION TYPE II

DRAWN BY	D.PALMER 11-12-65		
LAYOUT BY	C. DeAngelis 11-17-65		
CHECKED BY	J. S. 11-16-65		
GR. LEADER	[signature] 11/16/65		
VEH. DES. INT	[signature] 11/16		
STRUCTURES	[signature] 11/22	PROJ ENGR	[signature] 12-6-65
STRUCTURES	[signature] 11-30	REL GROUP	[signature] 12-6-65
WEIGHTS	[signature] 12/1		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CHANNEL
DESCENT STAGE-LH-AFT BEAM PNL-H_2O TANK SUPPORT - UPPER & LOWER

SIZE	CODE IDENT NO.		
B	26512	LDW280-17344	A
SCALE NONE		SHEET 1.000F 4	

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10, 3.00						EO A1	IN FLD, FOR -15, -16, 11/32 R WAS 3/8 R, 1/8 R WAS 3/8 R. SH 1.00 OF 4 WAS SH 1.00 OF 3. ADDED SH 1.10.	LTA-3,-5,-8 LEM-1,2,3,4,5,6	✓				
	2	1.00, 1.10 2.00, 3.00						EO A2	FOR -11, -12, -13, -14 FOR LTA-8(18) N/A IS LDW280-28539 WAS LDW280-25539. FOR -11 & -12 REMOVE EFF LTA-5(15) & LEM-1(31) N/A LDW280-25539, ADD -17 & -18 EFF LTA-5(15) & LEM-1(31) N/A LDW280-25539.	LTA-5,-8 LEM-1	NOT	REQD	T. FREDA MAY 13, 1966		
	3	1.00 1.10						LED 280-89 (R)	FOR ALL DASH NOS THAT NEXT ASSEMBLED ON LDW280-25539 CHANGED N/A TO LDW 280-28539 EFF LTA8(18) ONLY QTY REMAIN SAME	LTA8 (18)	NOT	REQD (R)	W. CONROY 6-21-66		

FOR CONTINUATION OF REVISIONS SEE SHEET _____

ENG 77.3 5-65

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17344	A
SCALE NONE			SHEET 1.10

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17344-18	E	CHANNEL	AL ALLOY SH	QQ-A-250/12	7075	.040 x 3 1/8 x 11 1/4	T6	88	
		-17						.040 x 3 1/8 x 11 1/4			
		-16						.032 x 3 1/8 x 14 3/8			
		-15						.032 x 3 1/8 x 14 3/8			
		-14						.040 x 3 1/8 x 11 1/4			
		-13						.040 x 3 1/8 x 11 1/4			
		-12						.040 x 3 1/8 x 11 1/4			
		LDW280-17344-11	E	CHANNEL	AL ALLOY SH	QQ-A-250/12	7075	.040 x 3 1/8 x 11 1/4	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP14-9030
T6	AL HEAT TREAT	MIL-H-6088

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

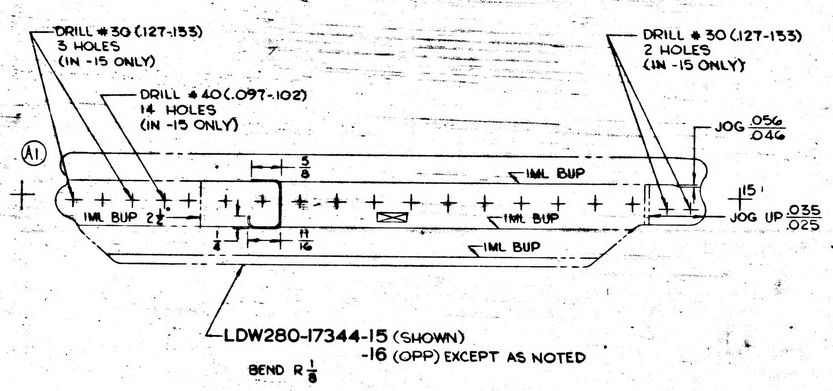
SIZE	CODE IDENT NO.		
B	26512	LDW280-17344	A

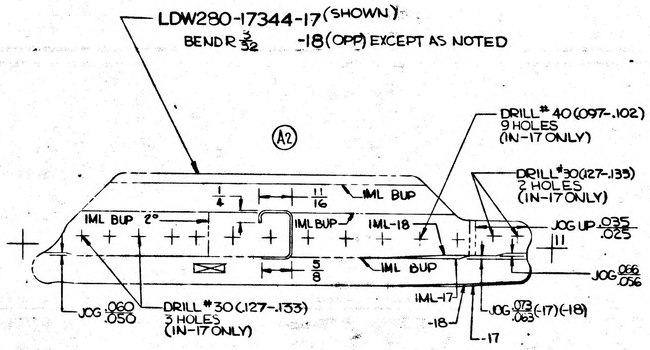
SCALE NONE SHEET 2.00

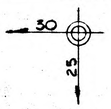
ENG 77.2 7-65

01

NAS 9-1100



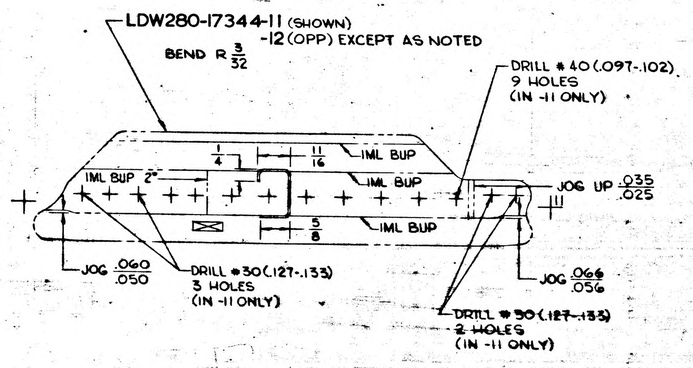


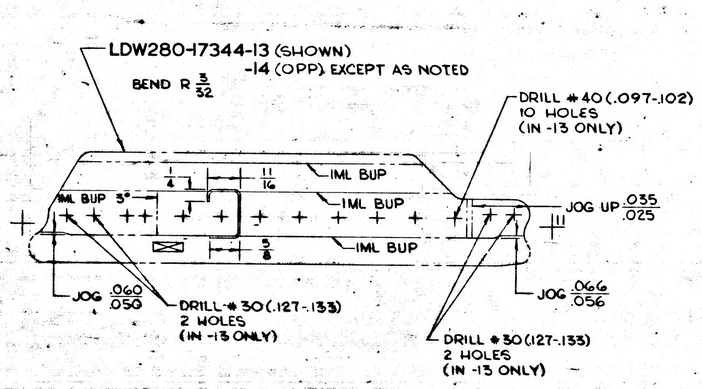


NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMPPART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	✓
FILLET AND RADIUS CORNER RADII TOLERANCES .016R TO .062R ± .008 .062R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2.3 REP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING BEAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ⌀ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF KN, MAS & NAS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓





GRUMMAN AIRCRAFT ENGNG CORP. BETHPAGE, L. I. NEW YORK

SIZE	CODE IDENT NO.		
F	26512	LDW280-17344	A

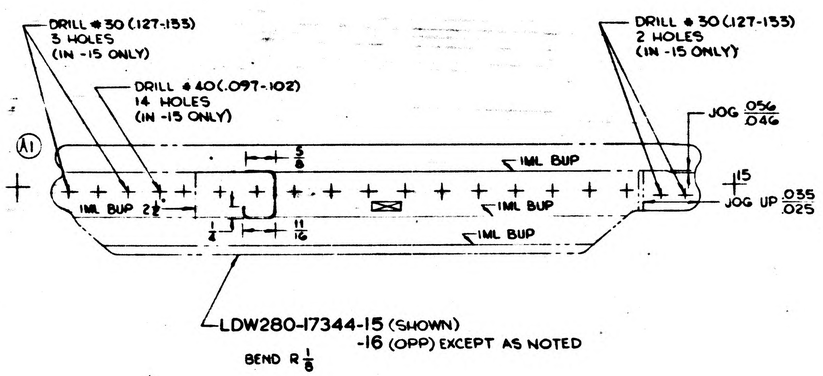
LEM | MODEL OR END ITEM | SCALE FULL | SHEET 3.00

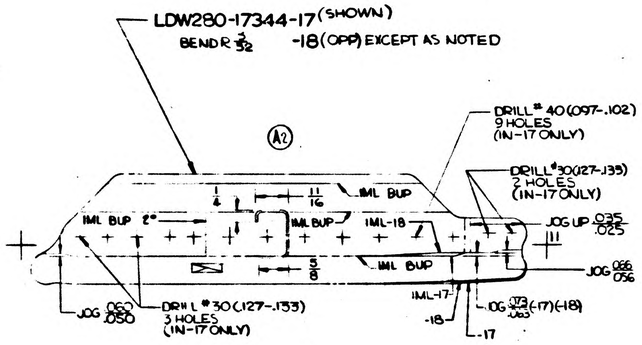
FOR PHOTO REPRODUCTION 1 K3

NAS 9-1100

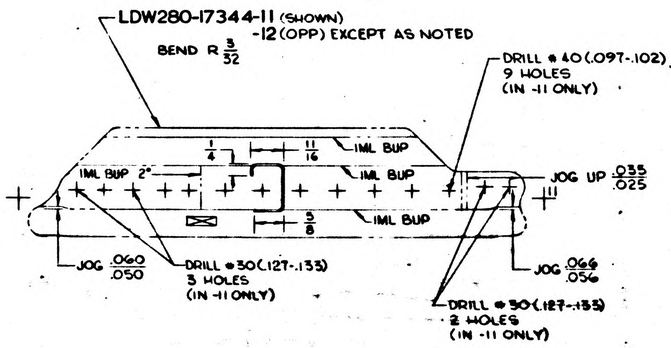
LDW280-17344-A01

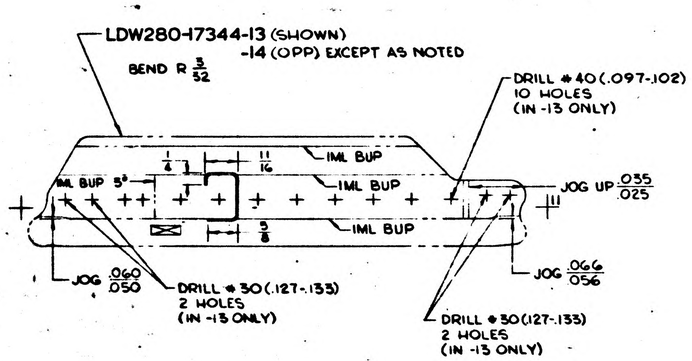
01





NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.





MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
BOXES CHECKED ✓ APPLY TO THIS DWG.

- RUBBER STAMPPART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☐ USE BOTH SIDES IF NECESSARY ✓
- FILLET AND INSIDE CORNER RADII TOLERANCES .060R TO .093R ± .010; .063R TO .250R ± .015; OVER .250R ± .031
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS 2.3 MIN THDS BEYOND PERMISSIBLE
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MIN.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTER**
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES
- DIAMETERS MARKED ⌀ MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0005 MAX MIN THICKNESS TO BE .0002 ON THREADED AREAS NO ALLOWANCES FOR PLATING IN HOLES
- SURFACE ROUGHNESS 125 INCLUDING REAMED HOLES PER MIL STD 10
- 250 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED 1.5
- SYMBOL √ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON F. ANGLES IS ± 1/32
- LENGTHS OF AN, MS & NS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED
- TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32 ✓

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I. NEW YORK

SIZE	CODE IDENT NO.		
F	26512	LDW280-17344	A

LEM — MODEL OR END ITEM — SCALE FULL — SHEET 5 OF 5

FOR PHOTO REPRODUCTION 1 K3

NAS 9-1100

LDW280-17344 A

01

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.2 REV 2-66

DWG. NO. LEO 280 | EO NO. 89
CONTROL INFO NO. LDW280-5898

ON THE FOLLOWING DRAWINGS FOR ALL DASH NUMBERS THAT NEXT ASSEMBLE ON LDW280-25539 CHANGE N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QUANTITIES REMAIN SAME

DWG No	CHANGE No	TITLE
LDW280-17306	A1	SEE DRAWINGS
LDW280-17278	B2	
LDW280-17277	B2	
LDW280-17221	A2	
LDW280-17219	A2	
LDW280-17175	A2	
LDW280-17174	A1	
LDW280-17169	A1	
LDW280-17167	A4	
LDW280-17139	B3	
LDW280-17408	A1	
LDW280-17407	A2	
LDW280-17400	A2	
LDW280-17356	A3	
LDW280-17355	A1	
LDW280-17348	A4	
LDW280-17344	A3	
LDW280-17341	B2	
LDW280-17329	A2	
LDW280-17328	A1	
LDW280M17342	A1	
LDW280M17247	B1	
LDW280M17139	B1	
LDW280M17115	B1	
LDW280M17110	B4	
LDW280-17448	A1	
LDW280-17450	A2	
LDW280-17447	A1	
LDW280-17445	A1	
LDW280-17439	A1	
LDW280-17410	A3	SEE DRAWINGS

NAS 9-1100

2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: CREATE N/A TO ACCOMMODATE LINE RUN

DESCRIPTION OF EO: FOR ALL DASH NUMBERS THAT NEXT ASSEMBLED ON LDW280-25539 CHANGED N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QTY REMAIN SAME

(2) GAEC EO RELEASE: 4/7/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: NOT REWORK | REQD SCRAP

APPROVED BY									
	W.B.M.								
DATE	4/4								
	VDI								
RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	OPS
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PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO 280

EO NO.: 89

ISSUED BY: A. MEVORAH / J. STRAKOSCH SECTION: VDI GROUP NO.: 335 PL: 35

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 302
CONTROL INFO NO. LDW280A1001

ENG 32.7 REV 3-65

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS * THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-17344	B1	SEE DRAWING
-17347	B1	
-17348	C1	
-17349	B3	
-17352	A2	
-17354	B1	
-17356	B1	
-17365	B2	
-17366	C1	
-17369	A2	
-17379	C1	
-17380	B1	
-17381	B1	
-17382	A1	
-17383	A1	
-17384	B2	
-17385	C1	
-17388	D??	
-17393	B?	
-17395	C?	
-17397	B1	
-17398	B1	
-17399	C1	
-17400	B3	
-17412	B1	
-17413	C1	
-17414	B?	
-17415	B1	
-17416	B1	
-17417	B1	
-17418	B1	
-17419	B1	
LDW280-17420	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
			ADDITIONAL REQUIREMENTS	FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.	FR 10/15/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LEM		LEM-7(37), LEM-8(38), LEM-9(39)	
LEM		LEM-10(40), LEM-11(41), LEM-12(42)	
LEM		LEM-13(43), LEM-14(44), LEM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REQ'D | REWORK | SCRAP
APPROVED BY: VD.1 | SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG
DATE: 10/5/66 | 11-11-66 | 11/17/66
PP: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 302

ISSUED B. M. GREY / J. STRAŁOSCH X1153 SECTION VEHICLE DESIGN INT. GROUP NO. 280 PL 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-66

DWG. NO. LEO280 | EO NO. 541
CONTROL INFO NO. LDW280A 6132

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ | CL II ENGRG CHG | ✓ | CL I ENGRG CHG | LCD19-1242 2

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B PCR * ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R	(46)

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: USE | REWORK | SCRAP
APPROVED BY: GAC | DATE: 3/28/67 | 5 | YDI | SUPPORT | RELIAB GROUP | GROUP LEADER: 4/5/67 | STRESS GROUP: 4/4/67 | LIAISON ENGRG: 3-30-67 | PROJ. ENGRG

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 541

ISSUED BY G. BECKER/J. STAKISCH X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 374
CONTROL INFO NO. LDW280B7394

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17323 ✓	B3	SEE DWG
-17327 ✓	B4	
-17330 ✓	E1	
-17337 ✓	D1	
-17341 ✓	E1	
-17343 ✓	C3	
-17344 ✓	B3	
-17347	B3	
-17348	C4	
LDW280-17349	C1	SEE DWG

* APPLICABLE DASH NOS

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. B CCA 1821 (5)

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM -*

GAEC EO RELEASE: ✓ 11/14

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY / DATE									
LM		LM-1545		✓			✓		11/19/69	VDI			11/19/69	11/19/69			

PRIORITY: C | DRAWING TITLE: SEE DWG | DRAWING NO.: LEO 280 | EO NO. 374

ISSUED BY 052869 MEVORAH / THORTJUSEN X86056 SECTION VEH DES INT GROUP NO. 335 - 25

01 NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENGR NO. LEO 280 | EO NO. 1541
CONTROL INFO NO. LDW 280B 8079

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40) [redacted]
ADD LTA-11 ([redacted]23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING NO *	TITLE	CHANGE NO
LDW280-17337	SEE DWG	D2
341		E2
343		C4
344		B4
347		B4
348		C5
349		C2
356		B4
362		B6
LDW280-17327	SEE DWG	B5

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG 99 PG 3-4 4 5 9 9 6 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: 8-8-69 / 8-8-69 / 8-9-69

EFFECTIVITY				DRAWING CHANGE REQD		DISPOSITION OF PARTS	APPROVED BY							
MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	REVISE DWG	RECORD ECO	NOT REQ'D REWORK / SCRAP	DATE	7-29-69			N			
LM		LTA-11([redacted]) (23)		✓				VOI	SUPPORT	RELIAB GROUP	GROUP LEADER 8-1-69	STRESS GROUP 8-2-69	LIAISON ENGRG	PROJ ENGRG 8-9-69

PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO.: LEO 280
EO NO.: 1541

8-12-69 ISSUED BY G. HANSMANN X87222 (ML) SECTION VOI GROUP NO 335 PL 25

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NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.	GAEC SCH NO.		

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.	GAEC SCH NO.		

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-28531	LEM-1 (31)	1
	LDW280-28531	LTA-8 (18)	1
	LDW280-25531	LTA-5 (15)	1
	LDW280-25533	LEM-1 (31)	1
	LDW280-25533	LTA-8 (18)	1
LEM	LDW280-25533	LTA-5 (15)	1
PART NO. LDW280-17345-11		GAEC SCH NO. 51-4	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1	1.10	2	3					
REV	B	B							
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED		GRUMMAN REL INFO			
		PRIM NO.	SR(sec)		
LAST DASH NO. USED	11	207	MP-B	8-19-6	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS — DECIMALS — ANGLES
$\pm 1/32$ $\pm .020$ $\pm 1/2$

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 — LINE ITEM 1 — DOCUMENTATION TYPE II

DRAWN BY	A. BEERS 7-29-65	RELIABILITY	8/18
LAYOUT BY	HAWKINS		
CHECKED BY	CED 8-2-65		
GRP LDR			
VEH DES INT			
STRUCTURES			
STRUCTURES		PROJ ENGR	8/14
WEIGHTS		RELEASE	

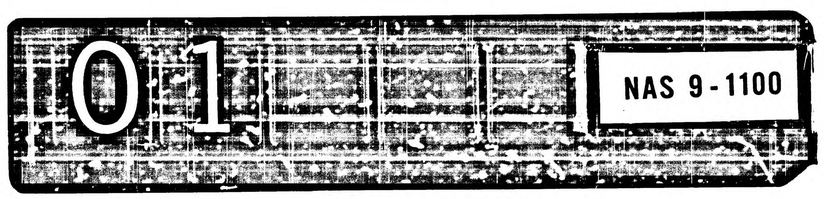
GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

ANGLE
DESCENT STAGE LH & R.H.
AFT. BEAM PANEL UPPER

SIZE	CODE IDENT NO.		
B	26512	LDW280-17345	B

SCALE NONE — SHEET 1 OF 4

ENG 77.1 9-64



REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	SHOP APPD
A	1	1, 1.10		A						FOR -11 REMOVED LTA-3, LEM-2 & LEM-3. N/A LDW280-25531 WAS LDW280-23531 & LDW280-25533 WAS LDW280-23531	NOTED		-11	A. BEERS 10-14-65		
B	1	1.& 1.10							LE0280-160	FOR -11 N/A WAS LDW280-23531 EFF LTA-3, LEM-2 & -3 ADDED N/A LDW280-52531 FOR LEM-2 & -3.	LEM-2 & -3	NOT	REQD	DAVELLA 7-28-66		
	2	1.10							LE0280-161	FOR -11 N/A WAS LDW280-25531 EFF LTA-5, -8 & LEM-1 ADDED N/A LDW280-28531 FOR LTA-8 & LEM-1	LTA-8 & LEM-1	NOT	REQD			
	3	1.10								REF LE0280-160 - NOT APPLICABLE	NOT REQD	NOT	REQD			

FOR CONTINUATION OF REVISIONS SEE SHEET

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280 - 17345	B

SCALE NONE | SHEET 1.10

ENG 77.3 5-64

01

NAS 9-1100

QTY PER ASSEMBLY	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	LDW280-17345-11	E		ANGLE	AL ALLOY SH	QQ-A-250/12	7075-T6	.050 x 2 3/4 x 3 1/2	NONE	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						88	ANODIZE	LSP14-9030

ENG 77.2 5-64

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17345

SCALE NONE SHEET 2

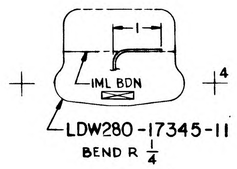
01

NAS 9-1100

NOTES:
1. NO TOOLING HOLES PERMITTED IN PART.

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	✓
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓



GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
C	26512	LDW280-17345

LEM — MODEL OR END ITEM — SCALE FULL — SHEET 3

FOR PHOTO REPRODUCTION

LDW280-17345

LDW280-17345

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO280 | EO NO. 160
CONTROL INFO NO. LDW280-7884

ON THE FOLLOWING DRAWINGS FOR DASH NO'S
NOTED* - RESTRICT N/A LDW280-23531 TO LTA-3(13) ONLY
ADD N/A LDW280-52531 FOR LEM-2(32) & LEM-3(33)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17131-13	B4	WEB
-17164-11	A3	CLIP
-17191-11	B1	STIFFENER
-17191-13		STIFFENER
-17192-17	B1	DOUBLER
-17193-11		ZEE
-13	A3	ZEE
-17193-15		ZEE
-17194-21		ANGLE
-23	A2	ANGLE
-17194-25		ANGLE
-17195-21		ANGLE
-23	C2	ANGLE
-25		ANGLE
-17195-27		ANGLE
-17201-13	A2	STIFFENER
-17253-11		ANGLE
-13	A1	ANGLE
-17253-15		ANGLE
-17254-11		ANGLE
-13		ANGLE
-15	B2	ANGLE
-17		ANGLE
-17254-19		ANGLE
-17278-15	C1	ZEE
-17278-19		CLIP
-17341-13	C1	DOUBLER
-17345-11	B1	ANGLE
-17349-11	B1	DOUBLER
-17400-11	B1	CLIP
-17607-11		SPLICE
-17607-13	A1	SPLICE
-17608-11		SPLICE
-13		SPLICE
-15	B3	SPLICE
-17608-17		SPLICE
-17611-21		SPLICE
LDW280-17611-23	B1	SPLICE

DRAWING #	CHANGE #	TITLE
LDW280-17619-11	A2	SPLICE
-17687-11	A2	ANGLE
-17730-11	A1	CLIP
-17738-11		PLATE
-13		CLIP
-14		CLIP
-15		CLIP
-16	A1	CLIP
-17		CLIP
-18		CLIP
-19		CLIP
-17738-20		CLIP
-17740-19	A2	ANGLE
-17741-13		ANGLE
LDW280-17741-15	A1	ANGLE
LDW280M17186-1	A2	SUPPORT
M17228-8	C1	SUPPORT
M17229-8	C2	SUPPORT
M17260-1	A1	ANGLE
M17285-1	A3	SUPPORT
M17408-2	B4	CAP STRIP
M17417-4	C3	CAP STRIP
M17419-7	C1	PIN
M17470-1	A2	FITTING
LDW280M17602-1	B1	WASHER

*USE APPLICABLE DASH NO IN DESCRIPTION OF E.O.

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: ADDITION OF AMBIENT He TANK

DESCRIPTION OF EO: FOR -* N/A WAS LDW280-23531 EFF LTA-3 LEM-2 & -3, ADDED N/A LDW280-52531 FOR LEM-2 & -3

GAEC EO RELEASE: LG 6/15/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-2(32)	
LEM		LEM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: NOT REQD; REWORK; SCRAP

APPROVED BY	DATE	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	COST
GMB	6/24/66	VDI		6/30		7266	

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO.280
EO NO.: 160

ISSUED BY: T. Bachofen / T. STRAKOSCH SECTION: VEHICLE DESIGN GROUP NO.: 335 PL:

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO.	LEO280		EO NO.	161
CONTROL INFO NO.	LDW280-7917			

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED * RESTRICT N/A LDW280-25531 TO LTA-5(15) ONLY
ADD N/A LDW280-28531 FOR LTA-8(18) & LEM-1(31)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17131-11	B5	WEB
-17164-11	A4	CLIP
-17191-11	B2	STIFFENER
-17191-13	B2	STIFFENER
-17192-17	B2	DOUBLER
-17193-11	A4	ZEE
-15		
-17193-17		ZEE
-17194-11	A3	ANGLE
-13		
-21		
-23		
-17194-25		
-17195-21	C3	
-23		
-25		
-27		
-17195-29		ANGLE
-17201-13	A3	STIFFENER
-17253-11	A2	ANGLE
-13		
-17253-15		
-17254-11	B3	
-13		
-15		
-17		
-17254-19		
-17277-11	C1	
-13		
-15		
LDW280-17277-17		ANGLE

DRAWING #	CHANGE #	TITLE
LDW280-17278-15	C2	ZEE
-17278-19		CLIP
-17331-11	A2	PLATE
-17331-13		ANGLE
-17331-15		ANGLE
-17341-13	C2	DOUBLER
-17345-11	B2	ANGLE
-17346-17	B1	
-18		
-21		
-23		
-25		
-27		
-17346-28		ANGLE
-17349-11	B2	PLATE
-17400-11	B2	DOUBLER
-17409-11	A1	CLIP
LDW280-17409-13		DOUBLER
LDW280-17443-17	A5	STIFFENER
LDW280 M17108-9	D1	CAP STRIP
M17138-5	D1	ANGLE
M17154-1	B1	CAP STRIP
M17186-1	A3	SUPPORT
M17226-1	B1	ANGLE
M17226-3		ANGLE
M17228-8	C2	SUPPORT
M17229-8	C3	SUPPORT
M17260-1	A2	ANGLE
LDW280 M17285-1	A4	SUPPORT

NAS 9-1100

* USE APPLICABLE DASH No IN DESCRIP OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: ADDITION OF AMBIENT He TANK

DESCRIPTION OF EO: FOR-* N/A WAS LDW280-25531 EFF LTA-5, 8 & LEM-1
ADDED N/A LDW280-28531 FOR LTA-8 & LEM-1

GAEC EO RELEASE: (R) LE 7.13.66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	
LEM		LEM 1(31)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: NOT REWORK	REQ'D SCRAP

APPROVED BY								
DATE								
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	DEPT

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 161

BY: J. Backofen / J. STRAKOSCH SECTION: VEHICLE DESIGN GROUP NO. 335 PL 35

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1, 1.10 & 3					✓	EO A1	REVISED TRIM ON -17 & -18 CHANGED N/A & EFF ON LTA-5 (15), LTA-8 (18) & LEM-1 (31) WAS LDW280-23531 LDW280-23533 WAS LTA-3, -5 & -8, LEM-6. REMOVED -11, -12, -13, -15 & -19. ADDED -21, -23, -25, -27 & -28. ADDED SH 1.10, SH 1 OF 4 WAS SH 1 OF 3.	LTA-3-5 & -8. LEM-1, -2, -3, -4, -5 & -6	-17 & -18	-11, -12, -13, -15 & -19	AUGELLO 5-16-66		
	2	1 & 1.10					✓	EO A2	FOR -17, -18, -21 THRU -28 REMOVED N/A LDW280-23531 & LDW280-23533. REMOVED EFF. LTA-3 (13), LEM-2 (32) THRU LEM-6 (36).	LTA-3 LEM-2, -3, -4 -5 & -6		✓			
	3	1.10 & 3						(R)	IN ZONE 4-C ON -21 REVISED CALLOUT: 3/8R (4 PLACES) WAS (2 PLACES). IN ZONE 4-B ON -23 REVISED CALLOUT: 3/8R (4 PLACES) WAS (2 PLACES). (DWG ERROR CORRECTION)	NOT REQD	NOT	REQD			

FOR CONTINUATION OF REVISIONS SEE SHEET _____

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17346	A

SCALE NONE | SHEET 1.10

ENG 77.3 5-65

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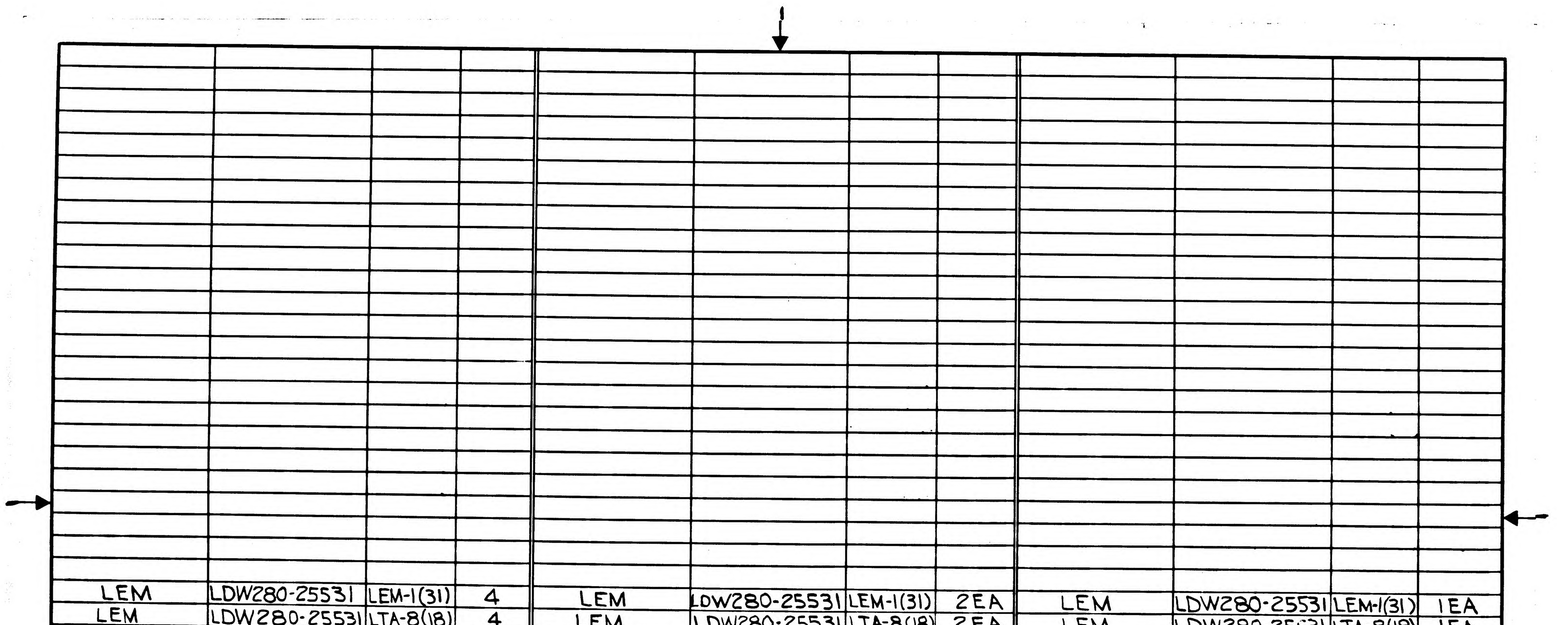
NAS 9-1100



LEM	LDW280-25531	LEM-1(31)	4	LEM	LDW280-25531	LEM-1(31)	2EA	LEM	LDW280-25531	LEM-1(31)	1EA
LEM	LDW280-25531	LTA-8(18)	4	LEM	LDW280-25531	LTA-8(18)	2EA	LEM	LDW280-25531	LTA-8(18)	1EA
LEM	LDW280-25531	LTA-5(15)	4	LEM	LDW280-25531	LTA-5(15)	2EA	LEM	LDW280-25531	LTA-5(15)	1EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17346-25	GAEC SCH NO.			PART NO. LDW280-17346-21&23	GAEC SCH NO.			PART NO LDW280-17346-17,18,27&28	GAEC SCH NO. 51-4		

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1	1.10	2	3						
REV	A	A	A	A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED		GRUMMAN REL INFO A		
LAST DASH NO. USED	-28	PRIM NO.	SR(001)	
		207	PP10	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS — DECIMALS — ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 LINE ITEM # 1 DOCUMENTATION TYPE II

DRAWN BY	A. BEERS 7-26-65	RELIABILITY	9/10
LAYOUT BY	HAWKINS 8/4/65		
CHECKED BY	HRC 8·2·65		
GP LEADER	9/9/65		
VEH. DES. IN	9/10		
STRUCTURES	9/7/65		
STRUCTURES	9-8	PROJ ENGR	9/10
WEIGHTS	9-9	RELEASE	9-11

GRUMMAN AIRCRAFT ENGRG CORP.
BETHPAGE, L. I., NEW YORK

ANGLE
DESCENT STAGE-LH & RH
AFT BEAM PANEL

SIZE	CODE IDENT NO.		
B	26512	LDW280-17346	A

SCALE NONE SHEET 1 OF 4

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1, 1.10 & 3					✓	EO A1	REVISED TRIM ON -17 & -18 CHANGED N/A & EFF ON LTA-5(15), LTA-8(18) & LEM-1(31) WAS LDW280-23531 LDW280-23533 WAS LTA-3, -5 & -8, LEM-6. REMOVED -11, -12, -13, -15 & -19. ADDED -21, -23, -25, -27 & -28. ADDED SH 1.10, SH 1 OF 4 WAS SH 1 OF 3.	LTA-3-5 & -8. LEM-1, -2, -3, -4, -5 & -6	-17 & -18	-11, -12, -13, -15 & -19	RUGELLO 5-16-66		
	2	1 & 1.10					✓	EO A2	FOR -17, -18, -21 THRU -28 REMOVED N/A LDW280-23531 & LDW280-23533. REMOVED EFF. LTA-3(13), LEM-2(32) THRU LEM-6(36).	LTA-3 LEM-2, -3, -4 -5 & -6		✓			
	3	1.10 & 3						(R)	IN ZONE 4-C ON -21 REVISED CALLOUT: 3/8R (4 PLACES) WAS (2 PLACES). IN ZONE 4-B ON -23 REVISED CALLOUT: 3/8R (4 PLACES) WAS (2 PLACES). (DWG ERROR CORRECTION)	NOT REQD	NOT	REQD			

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 5-65

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17346	A

SCALE NONE | SHEET 1.10

01 NAS 9-1100

QTY PER ASSEMBLY	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	LDW280-1734625	E		PLATE	AL ALLOY SH	QQ-A-250/12	7075-T6	.063X11/2X31/2	NONE	88	
	-18			ANGLE				.063X 3 X33/8			
	-17							.063X 3 X33/8			
	-23							.063X23/4X31/2			
	-21							.063X3X31/2			
	-28							.063X 3 X33/8			
	LDW280-1734627	E		ANGLE	AL ALLOY SH	QQ-A-250/12	7075-T6	.063X 3 X33/8	NONE	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17346	A

SCALE NONE SHEET 2

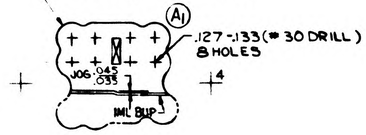
ENG 77.2 5-64

01

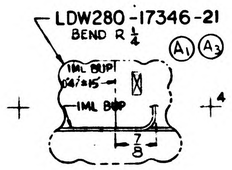
NAS 9-1100

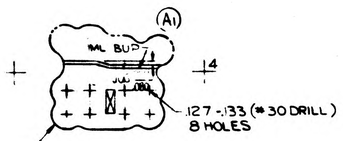
NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.

LDW280-17346-27 (SHOWN)
BEND R 1/4 -28 (OPP)

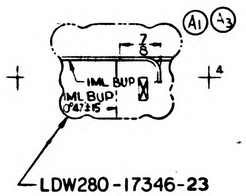


LDW280-17346-21
BEND R 1/4



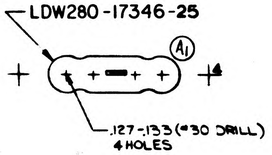


LDW280-17346-17 (SHOWN)
BEND R 1/4 -18 (OPP)



LDW280-17346-23
BEND R 1/4

LDW280-17346-25



MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG

- ✓ PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY
- FILLET AND INSIDE CORNER RADII TOLERANCES: .0625 TO .1250 ± .005; .1570 TO .2500 ± .010; OVER .2500 ± .020
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS 2.3 RDP THDS BEYOND PERMISSIBLE
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0063 MIN TO .004 MIN THICKNESS TO BE .0050 ON THREADED HOLES NO ALLOWANCES FOR PLATING IN HOLES
- 125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD 1C
- 250 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARGIN .6
- SYMBOL ✓ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF ALL DIMS & RAD AL ALT SHEETS SHORTER THAN 1 INCH ARE NOT SPECIFIED
- TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32 ✓

LDW280-17346 A/B

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
D	26512	LDW280-17346 A

LEM — MODEL OR END ITEM — SCALE FULL — SHEET 2

FOR PHOTO REPRODUCTION

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO.	LEO280		EO NO.	161
CONTROL INFO NO.	LDW280-7917			

ON THE FOLLOWING DRAWINGS FOR DASH No'S NOTED * RESTRICT N/A LDW280-25531 TO LTA-5(15) ONLY
ADD N/A LDW 280-28531 FOR LTA-8(18) & LEM-1(31)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17131-11	B5	WEB
-17164-11	A4	CLIP
-17191-11	B2	STIFFENER
-17191-12		STIFFENER
-17192-17	B2	DOUBLER
-17193-11	A4	ZEE
-15		
-17193-17		ZEE
-17194-11	A3	ANGLE
-13		
-21		
-23		
-17194-25		
-17195-21	C3	
-23		
-25		
-27		
-17195-29		ANGLE
-17201-13	A3	STIFFENER
-17253-11	A2	ANGLE
-13		
-17253-15		
-17254-11	B3	
-13		
-15		
-17		
-17254-19		
-17277-11	C1	
-13		
-15		
LDW280-17277-17		ANGLE

DRAWING #	CHANGE #	TITLE
LDW280-17278-15	C2	ZEE
-17278-19		CLIP
-17331-11	A2	PLATE
-17331-13		ANGLE
-17331-15		ANGLE
-17341-13	C2	DOUBLER
-17345-11	B2	ANGLE
-17346-17	B1	
-18		
-21		
-23		
-25		
-27		ANGLE
-17346-28		PLATE
-17349-11	B2	DOUBLER
-17[illegible]-11	B2	CLIP
-17409-11	A1	DOUBLER
LDW280 -17409-13		DOUBLER
LDW280 -17443-17	A5	STIFFBUCTR
LDW280M17108-4	D1	CAP STRIP
M17138-5	D1	ANGLE
M17154-1	B1	CAP STRIP
M17186-1	A3	SUPPORT
M17226-1	B1	ANGLE
M17226-3		ANGLE
M17228-8	C2	SUPPORT
M17229-8	C3	SUPPORT
M17260-1	A2	ANGLE
LDW280M17285-1	A4	SUPPORT

NAS 9-1100

* USE APPLICABLE DASH No IN DESCRIP OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	

REASON FOR EO: ADDITION OF AMBIENT He TANK

FOR-* DESCRIPTION OF EO: N/A WAS LDW 280-25531 EFF LTA-5, 8 & LEM-1
ADDED N/A LDW280-28531 FOR LTA 5 & LEM-1

(R) GAEC EO RELEASE: LE 7-13-66

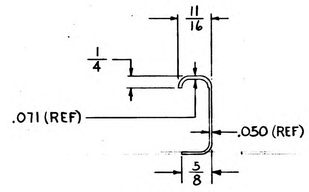
MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	
LEM		LEM 1(31)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: NOT REWORK	REQ'D SCRAP
✓			

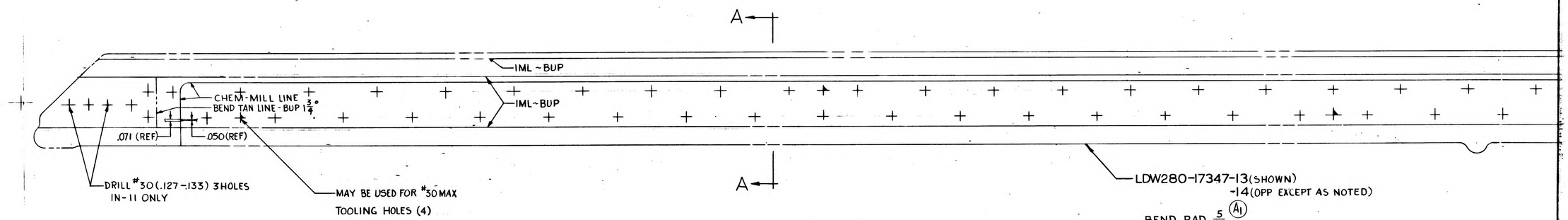
APPROVED BY	DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
[illegible]	[illegible]				6/16		7-2-66
[illegible]		VDI					

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO280	161

ENGR: A. Backelin / C. STRAKOSCH SECTION VEHICLE DESIGN GROUP NO. 335 PL 35



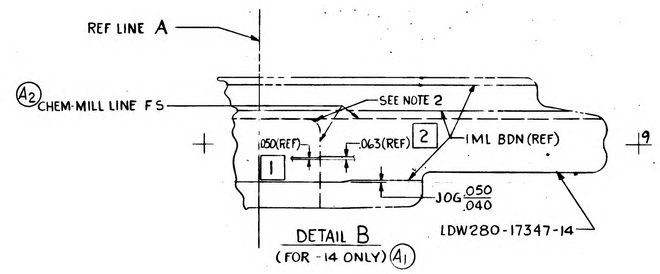
SECTION A-A



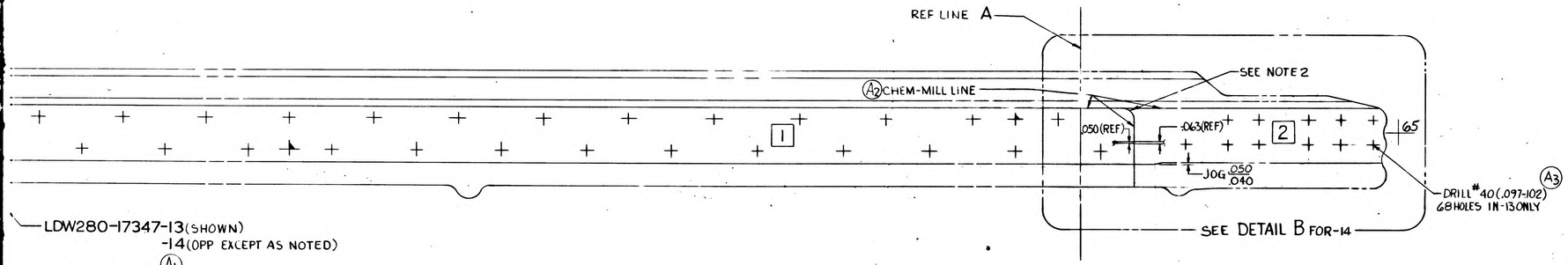
01/02 NAS 9-1100

CODE IDENT NO. 26512
LDW 280-17347 SH 4

NOTES:
1. NO TOOLING HOLES IN PARTS EXCEPT AS NOTED.
2. TOLERANCE ±.125 AT TANGENCY POINTS OF CHEM-MILL LINE CORNER RADII BETWEEN TWO ETCHED SURFACES.



DETAIL B
(FOR -14 ONLY) (A1)



LDW280-17347-13 & -14

CHEM-MILL LINE TOLERANCE:
± 1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED)
± 1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040

SYMBOL	THICKNESS AFTER CHEM-MILLING	DEPTH OF CUT
1	.050 +.003 −.002	.021 REF
2	.063 ±.003 −.002	.008 REF

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

- RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY. ✓
- FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010; .063R TO .250R ± .015; OVER .250R ± .030
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2.3 IMP. THDS. BEYOND PERMISSIBLE
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES
- 125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
- 200 √ FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS
- SYMBOL √ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED
- TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32

DWG SIZE DBL K2

PRINTING INFO ONLY
FULL SIZE SHEET AREA (IN SQ. IN.) = 17.5 SQ. FT.
½ SIZE SHEET AREA (¼ OF FULL) = 4.4 SQ. FT.

PRINT TRIM LINE

LDW280-17347 △ B
LDW280-17347 △ A

027002 NAS 9-1100

CODE IDENT NO. 26512
LDW280-17347 SH 4

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK
SIZE H | CODE IDENT NO. 26512 | LDW280-17347 | A
LEM | SCALE FULL | SHEET 3.00
MODEL OR END ITEM

FOR PHOTO REPRODUCTION

ENG 736 644

K2

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-68

DWG. NO. LE0280 | EO NO. 302
CONTROL INFO NO. LDW280A1001

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS * THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-17344	B1	SEE DRAWING
-17347	B1	
-17348	C1	
-17349	B3	
-17352	A2	
-17354	B1	
-17356	B1	
-17365	B2	
-17366	C1	
-17369	A2	
-17379	C1	
-17380	B1	
-17381	B1	
-17382	A1	
-17383	A1	
-17384	B2	
-17385	C1	
-17388	D22	
-17393	B2	
-17395	C2	
-17397	B1	
-17398	B1	
-17399	C1	
-17400	B3	
-17412	B1	
-17413	C1	
-17414	B2	
-17415	B1	
-17416	B1	
-17417	B1	
-17418	B1	
-17419	B1	
LDW280-17420	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
			ADDITIONAL REQUIREMENTS	FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.	FR 9/13/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: NOT REQ'D / REWORK / SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
LEM		LEM-7(37), LEM-8(38), LEM-9(39)					VDT	10/5/66				11-11-66		
LEM		LEM-10(40), LEM-11(41), LEM-12(42)												
LEM		LEM-13(43), LEM-14(44), LEM-15(45)												

PD C | DRAWING TITLE: NOTED | DRAWING NO.: LE0280 | EO NO. 302

ISSUED BY: M. GREY / J. STRAKOSCH X1153 SECTION VEHICLE DESIGN INT. GROUP NO. 280 PL 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-66

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A 5132		

FOR ALL DASH NO.# ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING #	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

LCD19-1242

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG
		✓

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

GAEC EO RELEASE: (B) 14 C — UK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R	(46)

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO

DISPOSITION OF PARTS: NOT REWORK; REQD SCRAP

APPROVED BY: DATE 3/28/67; 5 VDI; SUPPORT; RELIAB GROUP; GROUP LEADER 3/28/67; STRESS GROUP W 16 4/4/67; LIAISON ENGRG; PROJ ENGRG 3-30-67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 541

ISSUED BY G. BECHER/J. STRAKOSCH X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 1374
CONTROL INFO NO. LDW280B7394

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17323 ✓	B3	SEE DWG
-17327 ✓	B4	
-17330 ✓	E1	
-17337 ✓	D1	
-17341 ✓	E1	
-17343 ✓	C3	
-17344 ✓	B3	
-17347 ✓	B3	
-17348	C4	
LDW280-17349	C1	SEE DWG

* APPLICABLE DASH NOS

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. 8 CCA 1821 (5)

REASON FOR EO: LM-15(45) NO LONGER REQD.

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM -*

EFFECTIVITY: MODEL LM; PROCURING ACTIVITY NO.; BASIC UNIT NO. LM-15(45); SUB CONTR UNIT NO.

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO

DISPOSITION OF PARTS: REWORK; SCRAP ✓

APPROVED BY; DATE 4-24-69; VDI; SUPPORT; RELIAB ENGR; GROUP LEADER; STRESS GROUP; LIAISON ENGR; PROJ ENGR

PRIORITY C

DRAWING TITLE: SEE DWG

DRAWING NO.: LEO 280

EO NO. 1374

ISSUED BY MEVORAH / THORTUSEN X86036 SECTION VEH DES INT GROUP NO. 335-25

SEC X EO RELEASE 4/16/69

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO 280 | EO NO. 1541
CONTROL INFO NO. LDW 280B 8079

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (4D) [redacted]
ADD LTA-11 ([redacted]23) REQUIREMENTS WITH THE SAME NEXT ASSEMBLY AND QUANTITY.

DRAWING Nº *	TITLE	CHANGE Nº
LDW280-17337	SEE DWG	D2
341		E2
343		C4
344		B4
347		B4
348		C5
349		C2
356		B4
362		B6
LDW280-17327	SEE DWG	B5

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG 99 Pg 3-4 & 5 & 96 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: A 8-8-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11([redacted]) (23)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: REWORK; SCRAP; NOT REQ'D

APPROVED BY							
	PBT				N		
DATE	7-29-69			8-1-69	8-2-69		8-9-69
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO.: LEO 280
EO NO.: 1541

8-12-69 ISSUED BY G. HANSMANN X87222 (ML) SECTION VDI GROUP NO 335 PL 25

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SPEC CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1								EOA1	SUPERSEDED BY EOA-2 SH. 1 OF 4 WAS 1 OF 3, ADDED SH 1.10	NOT REQD	NOT	REQD	L. DIXON 4-18-66		
	2	1, 1.10, 2 & 3							EOA2	SUPERSEDES EOA1, IN B/M & FLD, ADDED LDW280-17348 -15 ANGLE	LTA-3-5 & -8 LEM-1, -2, -3, -4, -5 & -6	NOT	REQD			
	3								EOA3	SUPERCEDED BY EO. A5	NOT REQD	NOT	REQD			
	4	1, 1.10							LEO280-89	NOT APPLICABLE. PREVIOUSLY INCORPORATED IN EOA3	NOT REQD	NOT	REQD	LOEW 4-22-66		
	5	1, 1.10 3.00							EO A5	SUPERSEDES EOA3, REMOVED -11 IREQD FROM N/A LDW280-25539 FOR LTA-5 & LEM-1. FOR LTA-8 REVISED N/A WAS LDW280-25539 ADDED -17	LEM-1(31) LTA-8(18) LTA-5(15)	-11		5-10-66		

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 5-64

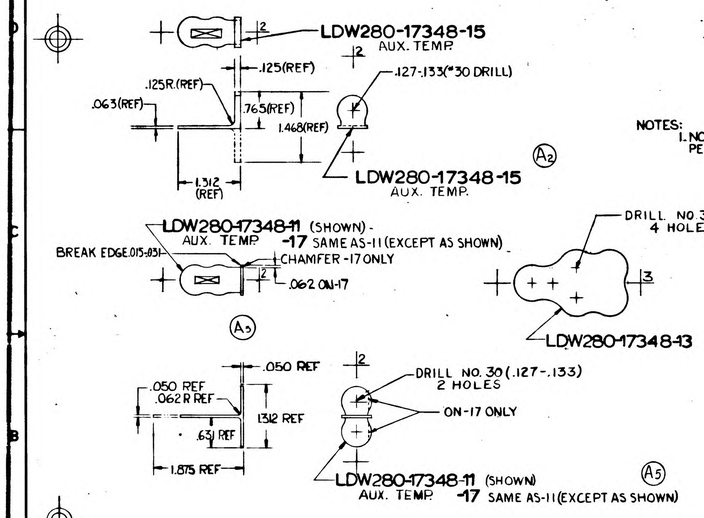
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17348	A

SCALE NONE | SHEET 1.10

01

NAS 9-1100



MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

- RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY. ✓
- FILLET AND INSIDE CORNER RADII TOLERANCES .010R TO .062R ± .010; .063R TO .250R ± .015; OVER .250R ± .030
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 MIN THDS. BEYOND PERMISSIBLE.
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING ON HOLES
- 125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
- 250 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED XX
- SYMBOL ✓ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LEN. HS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.
- TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32 ✓

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
C	26512	LDW280-17348	A

LEM — MODEL OR END ITEM — SCALE: FULL — SHEET 3.00

FOR PHOTOREPRODUCTION

NAS 9-1100

LDW280-17348-A

LEM	LDW280-25521	LEM-1(31)	1
LEM	LDW280-25521	LTA-8(18)	1
LEM	LDW280-25521	LTA-5(15)	1

PART NO. LDW280-17348-19

LEM	LDW280-25539	LEM-1(31)	1
LEM	LDW280-25539	LTA-5(15)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17348-17 | GAEC SCH NO.

LEM	LDW280-23521	LEM-6(36)	1
LEM	LDW280-23521	LEM-5(35)	1
LEM	LDW280-23521	LEM-4(34)	1
LEM	LDW280-23521	LEM-3(33)	1
LEM	LDW280-23521	LEM-2(32)	1
LEM	LDW280-23521	LTA-3(13)	1

PART NO. LDW280-17348-15

LEM	LDW280-25521	LEM-3(33)	1
	LDW280-25521	LTA-8(18)	
	LDW280-25521	LTA-5(15)	
	LDW280-25521	LEM-6(36)	
		LEM-5(35)	
		LEM-4(34)	
		LEM-3(33)	
		LEM-2(32)	
LEM	LDW280-23521	LTA-3(13)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17348-13 | GAEC SCH NO.

	LDW280-25533	LEM-1(31)	1
LEM	LDW280-25533	LTA-8(18)	2
	LDW280-25539	LTA-5(15)	1
	LDW280-23539	LEM-6(36)	2
		LEM-5(35)	
		LEM-4(34)	
		LEM-3(33)	
		LEM-2(32)	
	LDW280-23539	LTA-3(13)	2
	LDW280-25533	LEM-1(31)	4
	LDW280-25533	LTA-8(18)	
	LDW280-25533	LTA-5(15)	
	LDW280-23533	LEM-6(36)	
		LEM-5(35)	
		LEM-4(34)	
		LEM-3(33)	
		LEM-2(32)	
LEM	LDW280-23533	LTA-3(13)	4

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM

PART NO. LDW280-17348-11 | GAEC SCH NO. 51-4

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1	1-10	2	3					
REV	B	B	B	B					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	
LAST DASH NO. USED	-17

GRUMMAN REL. INFO.

PRIM NO.	VE(001)
	207

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS – DECIMALS – ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS49-1100 | LINE ITEM # 1 | DOCUMENTATION TYPE II

DRAWN BY	I. SCOTT 11-23-65	RELIABILITY
LAYOUT BY	C. DeAngelis 11-23-65	
CHECKED BY	E.J.R. 11-23-65	
GR LEADER		
VEH DES INT		
STRUCTURES	12-17-65	
STRUCTURES		PROJ ENGR
WEIGHTS		RELEASE

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

TEE
DESCENT STAGE-H_2O TANK-SPT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17348	B

SCALE NONE | SHEET 1 OF 4

ENG 77.1 9-64

Stub

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SEP CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1								EOA1	SUPERSEDED BY EOA-2 SH. 1 OF 4 WAS 1 OF 3, ADDED SH 1.10	NOT REQD	NOT	REQD	L. DIXON 4-18-66		
	2	1, 1.10, 2&3							EOA2	SUPERSEDES EOA1, IN B/M & FLD, ADDED LDW280-17348 -15 ANGLE	LTA-3-5&-8 LEM-1, 2, 3, 4, 5 &-6	NOT	REQD			
	3								EOA3	SUPERCEDED BY EO. A5	NOT REQD	NOT	REQD			
	4	, 1.10							LEO280-89	NOT APPLICABLE. PREVIOUSLY INCORPORATED IN EOA3	NOT REQD	NOT	REQD	LOEW 4-22-66		
	5	1, 1.10 3.00							EO A5	SUPERSEDES EO A3, REMOVED -11 REQD FROM N/A LDW280-25539 FOR LTA-5 & LEM-1. FOR LTA-8 REVISED N/A WAS LDW280-25539 ADDED-17	LEM-1(31) LTA-8(18) LTA-5(15)	-11		PREPARED 5-10-66		
B	1	1, 1.10 · 2.00, 3.00							EO B1	IN FLD & B/M ADDED -19, IN MOD BLK REMOVED -15 FROM LTA-5(15), LTA-8(18), LEM-1(31), N/A LDW280-25521 & REPLACED WITH -19.	LTA-5 (15) LTA-8(18) LEM-1(31)		✓	GIRIS 9-13-66		

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 5-64

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17348	B
SCALE NONE		SHEET 1.10	

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NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17348-19	E	ANGLE	AL ALLOY EXTR	QQ-A-200/11	7075-T6511	DIE #EXTR58715x1 3/8	NONE	88	
		LDW280-17348-17	E	TEE	AL. ALLOY EXTR	QQ-A-200/2	2014-T6511	DIE #EXTR65593x1 1/8	NONE	88	
		LDW280-17348-15	E	ANGLE	AL. ALLOY EXTR	QQ-A-200/11	7075-T6511	DIE #EXTR58715x1 1/8	NONE	88	
		LDW280-17348-13	E	PLATE	AL ALLOY SH	QQ-A-250/12	7075-T6	.080X2 1/8 X 3 1/8	NONE	88	
		LDW280-17348-11	E	TEE	AL ALLOY EXTR	QQ-A-200/2	2014-T6511	DIE #EXTR65593X1 1/8	NONE	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						88	ANODIZE	LSP-14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

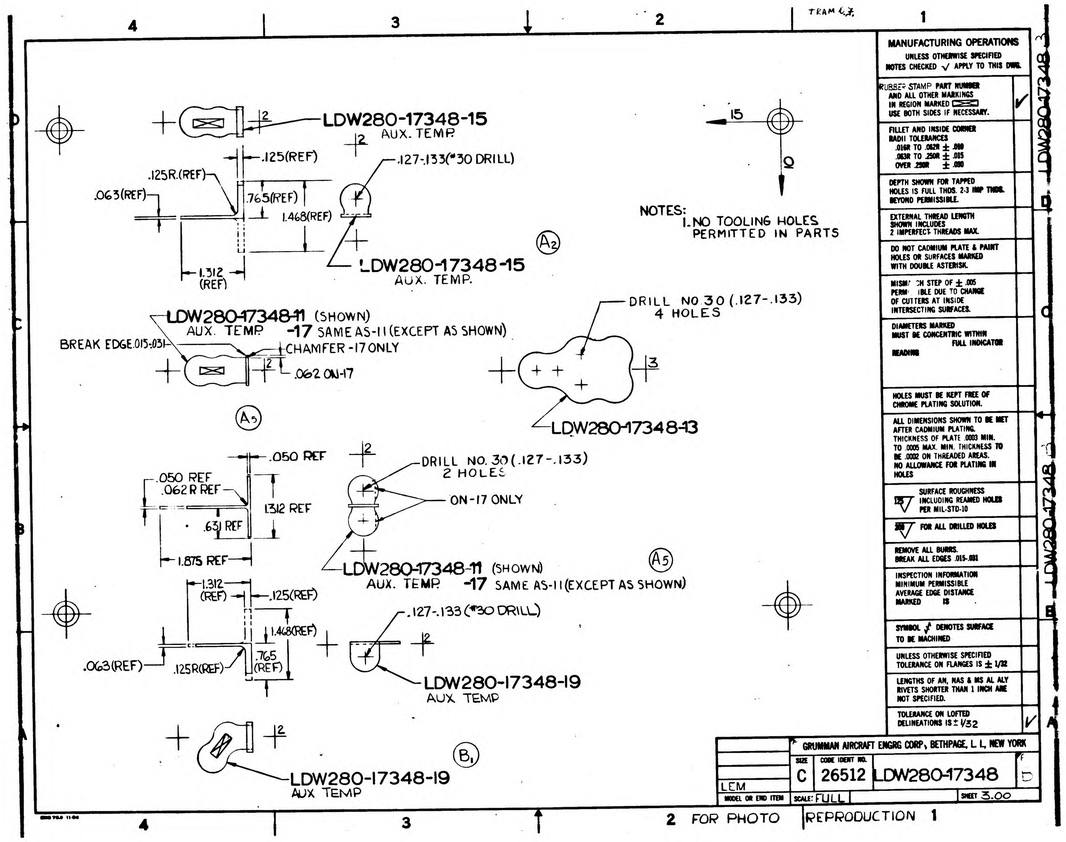
SIZE	CODE IDENT NO.		
B	26512	LDW280-17348	B

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100



MANUFACTURING OPERATIONS

UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

- RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY. ✓
- FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010; .063R TO .250R ± .015; OVER .250R ± .030
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 MIN THDS. BEYOND PERMISSIBLE.
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES
- 125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
- 250 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS .
- SYMBOL DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.
- TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32 ✓

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	LDW280-17348	D
C	26512		

LEM — MODEL OR END ITEM — SCALE: FULL — SHEET 3.00

LDW280-17348 3 — LDW280-17348 3 — LDW280-17348 3

FOR PHOTO REPRODUCTION

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.2 REV 3-65

DWG. NO. LEO 280 | EO NO. 89
CONTROL INFO NO. LDW280-5898

ON THE FOLLOWING DRAWINGS FOR ALL DASH NUMBERS THAT NEXT ASSEMBLE ON LDW280-25539 CHANGE N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QUANTITIES REMAIN SAME

DWG No	CHANGE No	TITLE
LDW280-17306	A1	SEE DRAWINGS
LDW280-17278	B2	
LDW280-17277	B2	
LDW280-17221	A2	
LDW280-17219	A2	
LDW280-17175	A2	
LDW280-17174	A1	
LDW280-17169	A1	
LDW280-17167	A4	
LDW280-17139	B3	
LDW280-17408	A1	
LDW280-17407	A2	
LDW280-17400	A2	
LDW280-17356	A3	
LDW280-17355	A1	
LDW280-17348	A4	
LDW280-17344	A3	
LDW280-17341	B2	
LDW280-17329	A2	
LDW280-17328	A1	
LDW280M17342	A1	
LDW280M17247	B1	
LDW280M17139	B1	
LDW280M17115	B1	
LDW280M17110	B4	
LDW280-17448	A1	
LDW280-17450	A2	
LDW280-17447	A1	
LDW280-17445	A1	
LDW280-17439	A1	
LDW280-17410	A3	SEE DRAWINGS

NAS 9-1100

2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: CREATE N/A TO ACCOMMODATE LINE RUN

DESCRIPTION OF EO: FOR ALL DASH NUMBERS THAT NEXT ASSEMBLED ON LDW280-25539 CHANGED N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QTY REMAIN SAME

GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY	DATE	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	EO NO.
LEM		LTA-8(18)		✓		NOT	REQD		4/8/66						89
								VDI							

PRIORITY: C | DRAWING TITLE: NOTED | DRAWING NO.: LEO 280

ISSUED BY A. MEVORAH / J. STRAKOSCH | SECTION VDI | GROUP NO. 335 | PL. 35

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 308
CONTROL INFO NO. LDW280A1001

DMD 22.2 REV 3-66

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS * THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-17344	B1	SEE DRAWING
-17347	B1	
-17348	C1	
-17349	B3	
-17352	A2	
-17354	B1	
-17356	B1	
-17365	B2	
-17366	C1	
-17369	A2	
-17379	C1	
-17380	B1	
-17381	B1	
-17382	A1	
-17383	A1	
-17384	B2	
-17385	C1	
-17388	D22	
-17393	B2	
-17395	C2	
-17397	B1	
-17398	B1	
-17399	C1	
-17400	B3	
-17412	B1	
-17413	C1	
-17414	B2	
-17415	B1	
-17416	B1	
-17417	B1	
-17418	B1	
-17419	B1	
LDW280-17420	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: ADDITIONAL REQUIREMENTS

DESCRIPTION OF EO: FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.

GAEC EO RELEASE: FR 10/18/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-7(37), LEM-8(38), LEM-9(39)	
LEM		SM-10(A)(40), LEM-11(41), LEM-12(42)	
LEM		LEM-13(43), LEM-14(44), LEM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: NOT REQ'D | REWORK | SCRAP

APPROVED BY: DATE ✓ | V.D.I. | SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP 10/5/66 | LIAISON ENGRG | PROJ ENGRG 11-11-66

PS C | DRAWING TITLE: NOTED | DRAWING NO. LEO280 | EO NO. 302

ISSUED BY: M. GREY / J. STRAKOSCH X1153 | SECTION VEHICLE DESIGN INT. | GROUP NO. 280 | PL 35

NAS 9-1100

ENG 22.2 REV 3-68

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A6132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	AG
17228		A2
17229		A2
17230		C2
17231		BG
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	LCD19-1242	2

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R	(46)

DRAWING CHANGE REQD: REVISE DWG 1; RECORD EO

DISPOSITION OF PARTS: NOT REWORK; REQD SCRAP

APPROVED BY / DATE: 5 YDI; SUPPORT; RELIAB GROUP; GROUP LEADER 3/28/67; STRESS GROUP 3/29/67; LIAISON ENGRG 4/4/67; PROJ ENGRG 3 30 67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 541

ISSUED BY G. BECHER/J. STARUSCH X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280 | EO NO. 626
CONTROL INFO NO. LDW280A7168

ENG 32.2 REV 3-65

REVISE N/A FOR NOTED EFF AS SHOWN. QUANTITIES REMAIN THE SAME

DWG No *	EFF	N/A	WAS**	CH.LTR.	TITLE
LDW280-17189-11 -11	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R (46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B3	SEE DWG
LDW280-17228 -11 THRU-18 -11 THRU-18	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53523 LDW280-54523	LDW280-23523 LDW280-23523	A3	
LDW280-17229 -11 THRU-18 -11 THRU-18	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53523 LDW280-54523	LDW280-23523 LDW280-23523	A3	
LDW280-17230 -11,-19,-21&-23 -11,-19,-21&-23	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53523 LDW280-54523	LDW280-23523 LDW280-23523	C5	
LDW280-17231-19 -19	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B7	
LDW280-17233 -30,31,33,34,35&-37 -30,-31,-33,-34,-35&-37 -29,-32,-33,-34-36&-38 -29,-32,-33,-34-36&-38	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46) LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520 LDW280-53521 LDW280-54521	LDW280-52520 LDW280-52520 LDW280-23521 LDW280-23521	D3	
LDW280-17234 -13,-14,-17,-19&-21 -13,-14,-17,-19&-21	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B3	
LDW280-17235-13&-14 -13&-14	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B3	
LDW280-17306-13 -13	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280 53521 LDW280-54521	LDW280-23521 LDW280-23521	B4	
LDW280-17310 -11,-13,-14,-15,-17&-19 -11,-13,-14,-15,-17&-19	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3D/R(46)	LDW280-53520 LDW280-54520	LDW280-52520 LDW280-52520	B3	
LDW280-17330 -32,-34,-36&-38 -32,-34,-36&-38 -31,-33,-35&-37 -31,-33,-35&-37	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46) LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520 LDW280-53521 LDW280-54521	LDW280-52520 LDW280-52520 LDW280-23521 LDW280-23521	D4	
LDW280-17348-13&15 -13&15	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	C3	
LDW280-17431 -15,-17&-19 -15,-17&-19	LM-3(33) LM-4(34) THRU LM-15(15) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	B5	
LDW280-17437 -11,-13&-15 -11,-13&-15 -14,-16&-18 -14,-16&-18	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46) LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53520 LDW280-54520 LDW280-53521 LDW280-54521	LDW280-52520 LDW280-52520 LDW280-23521 LDW280-23521	A6	
LDW280-17438 -11,-13&-15 -11,-13&-15	LM-3(33) LM-4(34) THRU LM-15(45) & LTA-3 D/R(46)	LDW280-53521 LDW280-54521	LDW280-23521 LDW280-23521	A3	SEE DWG

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	LCD-1533
		✓	

REASON FOR EO: REINFORCE UPPER DECKS

DESCRIPTION OF EO: ON *, N/A WAS **

GAEC EO RELEASE: JA 4/20/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-3(33) THRU LTA-3 D/R(46)	LM-15(45)

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO

DISPOSITION OF PARTS: HOT REWORK; REQD SCRAP 5

APPROVED BY: DATE 6/9/67; VDI; SUPPORT; RELIAB. GROUP

GROUP LEADER 4/19/67; STRESS GROUP 4/20/67; LIAISON ENGRG; PROJ. ENGRG 4/20/67

PRIORITY C

DRAWING TITLE: NOTED

DRAWING NO. LE0280

EO NO. 626

ISSUED BY G. ZEMAN / J. STRAKOSCH SECTION VDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 1374
CONTROL INFO NO. LDW280B7394

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17323 ✓	B3	SEE DWG
-17327 ✓	B4	
-17330 ✓	E1	
-17337 ✓	D1	
-17341 ✓	E1	
-17343 ✓	C3	
-17344 ✓	B3	
-17347 ✓	B3	
-17348 ✓	C4	
LDW280-17349	C1	SEE DWG

* APPLICABLE DASH NOS

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. 8 CCA 1821 (6)

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM -*

MODEL: LM

EFFECTIVITY: PROCURING ACTIVITY NO. | GAEC UNIT NO. LM-15(45) | SHIP CONFIG UNIT NO.

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: REWORK | ✓ SCRAP

APPROVED BY / DATE: VDI | SUPPORT | RELIAB. APPROV. | GROUP LEADER | STRESS GROUP | LIAISON CONTROL | PROJ. ENGR.
PBP 4-26-69 | WJH 4-28-69 | 4-29-69

PRIORITY: C

DRAWING TITLE: SEE DWG

DRAWING NO.: LEO 280

EO NO.: 1374

GAEC EO RELEASE: (E) 4/29/69

ISSUED BY: 052869 MEVORAH / THORJUSEN X86046 SECTION: VEH DES INT GROUP NO. 335-25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

WORK ORDER NO. LEO 280 | EO NO. 1541
CONTROL INFO NO. LDW280B 8079

FOR ALL PART NUMBERS EFFECTIVE ON LM-10(40) [redacted]
ADD LTA-11 ([redacted]23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING NO. *	TITLE	CHANGE NO.
LDW280-17337	SEE DWG	D2
341		E2
343		C4
344		B4
347		B4
348		C5
349		C2
356		B4
362		B6
LDW280-17327	SEE DWG	B5

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG 99 Pg 3-4 & 5 & 96 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: A 8-8-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
LM		LTA-11([redacted])		✓		NAT REQ'D REWORK SCRAP	[redacted]	7-29-69	VDI		[redacted] 8-1-69	M 8-2-69	[redacted] 8-4-69	[redacted] 8-4-69
		(23)												

PRIORITY: C | DRAWING TITLE: SEE DRAWINGS | DRAWING NO.: LEO 280 | EO NO.: 1541

8-12-69 ISSUED BY G. HANSMANN X87222 (MH) SECTION VDI GROUP NO 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280 17348 | EO NO. C6

CONTROL INFO NO. LDW280 B 8808

FOR LDW280-17348-13, #-15.

N/A LDW280-60521 WAS LDW280-54521 FOR LM-10(40) THRU LM-14(44) & LTA-11(23) ADD LTA-3 D/R-1(460) EFFECTIVITY FOR N/A LDW 280-60521 (QTY REMAINS THE SAME AS THAT OF LM-10(40)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG. 51 Pg. 1 (5)

REASON FOR EO: REDESIGN OF UPPER DECKS FOR EXTENDED PROP. TANKS

DESCRIPTION OF EO: FOR -13, # -15 N/A LDW280-60521, WAS LDW280-54521 FOR LM-10(40) THRU LM-14(44) & LTA-11(23) ADDED LTA-3 D/R-1 (460) EFFECTIVITY

GAEC EO RELEASE: 8-29-69; 9-2-69; 9-10-69

MODEL	EFFECTIVITY: PROGRAMMING ASSIGNMENT NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LM-10(40) THRU LM-14(44)		
LM	LTA-11(23)		
LM	LTA-3 D/R-1(460)		

DRAWING CHANGE REQD: ✓ REVISE DWG; RECORD EO

DISPOSITION OF PARTS: NOT REQ'D REWORK; SCRAP

APPROVED BY / DATE: 8-26-69 (ML) VDI; 8-26-69; 8-27-69; 8-28-69; 9-2-69; 9-10-69

SUPPORT | RELIAB. GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG

PRIORITY: C

DRAWING TITLE: TEE D/S H2O TANK SUPPORT

DRAWING NO.: LDW280-17348

EO NO.: C6

9-10-69

ISSUED BY M.H. LAMB/G. HANSMANN X87222 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

				LM	LDW280-54533	LM-15(45)	1				
						THRU					
					LDW280-54533	LM-4(34)	1				
					LDW280-23533	LM-3(33)	1				
					LDW280-23533	LM-2(32)	1	LM	LDW280-54533	LM-15(45)	1
					LDW280-25533	LM-1(31)	1			LM-14(44)	1
					LDW280-54533	LTA-3D(R(46)	1			LM-13(43)	1
					LDW280-25533	LTA-8(18)	1			LM-12(42)	1
					LOW280-25533	LTA-5(15)	1			LM-11(41)	1
					LDW280-23533	LTA-3(13)	1			LM-10(40)	1
										LM-9(39)	1
										LM-8(38)	1
										LM-7(37)	1
					LDW280-54531	LM-15(45)	1			LM-6(36)	1
						THRU				LM-5(35)	1
					LDW280-54531	LM-4(34)	1		LDW280-54533	LM-4(34)	1
					LDW280-52531	LM-3(33)	1		LDW280-23533	LM-3(33)	1
					LDW280-52531	LM-2(32)	1		LDW280-23533	LM-2(32)	1
					LDW280-28531	LM-1(31)	1		LDW280-25533	LM-1(31)	1
					LDW280-54531	LTA-3DR(46)	1		LDW280-54533	LTA-3D/R(46)	1
					LDW280-28531	LTA-8(18)	1		LDW280-25533	LTA-8(18)	1
					LDW280-25531	LTA-5(15)	1		LDW280-25533	LTA-5(15)	1
				LM	LDW280-23531	LTA-3(13)	1	LM	LDW280-23533	JTA-3(13)	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.		PART NO. LDW 280-17349-11		GAEC SCH NO.		PART NO. LDW280-17349-13		GAEC SCH NO.	

5.1

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10	2	3					
REV	B	B							
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	
LAST DASH NO. USED	-13

GRUMMAN REL INFO B

PRIM NO.	VK(001)
207	ME-18 3/29/67

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 | LINE ITEM 1 | DOCUMENTATION TYPE II

DRAWN BY	R. BURGER 11-2-65	RELIABILITY			
LAYOUT BY	A. Richa 11/4/65				
CHECKED BY	EG 10-28-65				
GR LEADER	[illegible] 11/4/65				
VEH DES INT	[illegible] 11/4/65				
STRUCTURES	[illegible] 11/4/65	PROJ ENGR	[illegible] 11/4		
STRUCTURES	[illegible] 11-10	REL GROUP	[illegible] 11/10		
WEIGHTS	[illegible] 11-11				

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

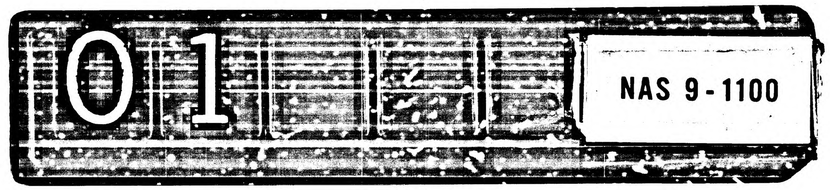
DOUBLER
DESCENT STAGE-L H AFT BEAM
PROP. TANK SUPPORT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17349	B

SCALE NONE | SHEET 1 OF 4

ENG 77.1 9-64

SWP



REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00,1.10					✓	EO A1	ADDED N/A FOR-11 LDW280-23531 FOR LTA-3 LEM-2 THRU LEM-6, AND LDW280-25531 FOR LTA-5, LTA-8, & LEM-1 (SH. 10F 4 WAS 1 OF 3, ADDED SH 1.10	NOTED	NOT	REQD	FRWIKI 1-31-68		
B	1	1.00,1.10							INCORPORATED LEO 280-160	LM-2, LM-3			E. HOFSISS 3-24-69		
	2	1.00,1.10							INCORPORATED LEO 280-161	LTA-8, LM-1					
	3	1.00,1.10							INCORPORATED LEO 280-302	LM-7 THRU LM-15					
	4	1.00, 1.10							INCORPORATED LEO 280-541	LTA-3D/R					
	5	1.00,1.10						(4)	INCORPORATED EO B5	LM-4 THRU LM-15		N.U.			

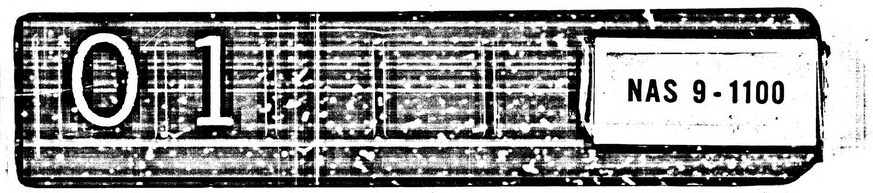
CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS
	B					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17349	B

SCALE NONE SHEET 1.10

ENG 77.16 3-66



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17349-13	E	DOUBLER	AL ALLOY SH	QQ-A-283	7075-T6	.040 x 4 x 6	NONE	88	
		LDW280-17349-11	E	DOUBLER	AL ALLOY SH	QQ-A-283	7075-T6	.040 x 4 x 6	NONE	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
38	ANODIZE	LSP14-9030

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17349

SCALE NONE SHEET 2

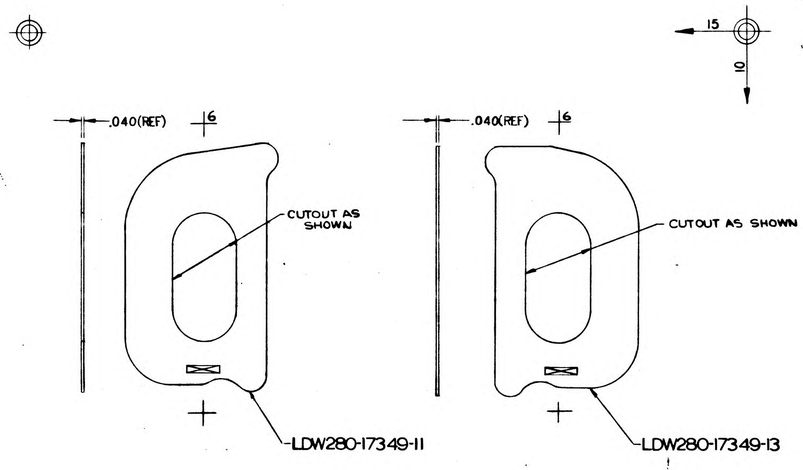
ENG 77.2 7-65

01

NAS 9-1100

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY	✓
TOLERANCE ON LOFTED DELINEATIONS IS ±1/32	✓



	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK		
LEM	SIZE C	CODE IDENT NO. 26512	LDW280-17349
MODEL OR END ITEM	SCALE FULL		SHEET 3

FOR PHOTO REPRODUCTION

LDW280-17349

NAS 9-1100

ENG 22.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-17349 | EO NO. A1
CONTROL INFO NO. LDW280-4414

ADD N/A FOR -11; LDW280-23531 FOR LTA-3 (13), LEM-2 (32) THRU LEM-6 (36), AND LDW 280-25531 FOR LTA-5(15), LTA-8 (18), & LEM-1 (31)

DETAIL SPEC REQ | CL II ENGRG CHG | ✓ CL I ENGRG CHG | LDW280-4414

REASON FOR EO: TO ADD N/A FOR -11

DESCRIPTION OF EO: ADDED N/A FOR -11; LDW 280-23531 FOR LTA-3, LEM-2 THRU LEM-6, AND LDW 280-25531 FOR LTA-5, LTA-8, & LEM-1

GAEC EO RELEASE: PP/B 11/6

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-3(13), LEM-2(32)	
LEM		THRU LEM-6(36)	
LEM		LTA-5(15), LTA-8 (18), LEM-1 (31)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: NO REWORK | O'D SCRAP

APPROVED BY: [signature] — DATE: 11/30 — VDI — SPECIFICATIONS — RELIAB GROUP — GROUP LEADER: 9/13 — STRESS GROUP: 11/15/65 — LIAISON ENGRG — PROJ ENGRG

PRIORITY: C

DRAWING TITLE: DOUBLER ~ DESCENT STAGE ~ LH AFT BEAM ~ PROP. TANK SUPPORT

DRAWING NO.: LDW280-17349

EO NO.: A1

ISSUED BY A. RICHER / J. STRAWOSCH

SECTION V.D.I.

GROUP NO. 280 PL 22

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.2 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 160

CONTROL INFO NO. LDW280-7884

ON THE FOLLOWING DRAWINGS FOR DASH No'S

NOTED* - RESTRICT N/A LDW280-23531 TOLTA-3(13) ONLY
ADD N/A LDW280-52531 FOR LEM-2(32) & LEM-3(33)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17131-13	B4	WEB
-17164-11	A3	CLIP
-17191-11	B1	STIFFENER
-17191-12		STIFFENER
-17192-17	B1	DOUBLER
-17193-11		ZEE
-13	A3	
-17193-15		ZEE
-17194-21		ANGLE
-23	A2	
-17194-25		
-17195-21		
-23	C2	
-25		
-17195-27		ANGLE
-17201-13	A2	STIFFENER
-17253-11		ANGLE
-13	A1	
-17253-15		
-17254-11		
-13		
-15	B2	
-17		
-17254-19		ANGLE
-17278-15	C1	ZEE
-17278-19		CLIP
-17341-13	C1	DOUBLER
-17345-11	B1	ANGLE
-17349-11	B1	DOUBLER
-17400-11	B1	CLIP
-17607-11	A1	SPLICE
-17607-13		
-17608-11		
-13	B3	
-15		
-17608-17		
-17611-21		
LDW280-17611-23	B1	SPLICE

DRAWING #	CHANGE #	TITLE
LDW280-17619-11	A2	SPLICE
-17687-11	A2	ANGLE
-17730-11	A1	CLIP
-17738-11		PLATE
-13		CLIP
-14		
-15		
-16	A1	
-17		
-18		
-19		
-17738-20		CLIP
-17740-19	A2	ANGLE
-17741-13		
LDW280-17741-15	A1	ANGLE
LDW280M17186-1	A2	SUPPORT
M17228-8	C1	
M17229-8	C2	SUPPORT
M17260-1	A1	ANGLE
M17285-1	A3	SUPPORT
M17408-2	B4	CAP STRIP
M17417-4	C3	CAP STRIP
M17419-7	C1	PIN
M17440-1	A2	FITTING
LDW280M17602-1	B1	WASHER

NAS 9-1100

*USE APPLICABLE DASH NO IN DESCRIPTION OF E.O.

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: ADDITION OF AMBIENT He TANK

DESCRIPTION OF EO: FOR-* N/A WAS LDW280-23531 EFF LTA-3 LEM-2 & 3
ADDED N/A LDW280-52531 FOR LEM-2 & 3

GAEC EO RELEASE: LE 7-19-66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-2(32)	
LEM		LEM-3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK NOT REQD | SCRAP

APPROVED BY	DATE	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	QUAL
gjs	6/28/66		mjd 6/30		Rmlitt 7/1/66	Rmlitt 7/1/66
VDI					WMH 7/2/66	

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO.280

EO NO.: 160

ISSUED BY: T. Bichsel / L. STRAKOSCH SECTION: VEHICLE DESIGN GROUP NO.: 335 PL: 53

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO.	LEO280		EO NO.	161
CONTROL INFO NO.	LDW280-7917			

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED * RESTRICT N/A LDW280-25531 TO LTA-5(15) ONLY
ADD N/A LDW280-28531 FOR LTA-8(18) & LEM-1(31)
QUANTITIES REMAIN THE SAME

DRAWING #	CHANGE #	TITLE
LDW280-17131-11	B5	WEB
-17164-11	A4	CLIP
-17191-11	B2	STIFFENER
-17191-12		STIFFENER
-17192-17	B2	DOUBLER
-17193-11 thru -15	A4	ZEE
-17193-17		ZEE
-17194-11 thru -23	A3	ANGLE
-17194-25		ANGLE
-17195-21 thru -27	C3	ANGLE
-17195-29		STIFFENER
-17201-13	A3	ANGLE
-17253-11 thru -13	A2	ANGLE
-17253-15		ANGLE
-17254-11 thru -17	B3	ANGLE
-17254-19		ANGLE
-17277-11 thru -15	C1	ANGLE
LDW280-17277-17		ANGLE

DRAWING #	CHANGE #	TITLE
LDW280-17278-15	C2	ZEE
-17278-19		CLIP
-17331-11	A2	PLATE
-17331-13		ANGLE
-17331-15		ANGLE
-17341-13	C2	DOUBLER
-17345-11	B2	ANGLE
-17346-17 thru -27	B1	ANGLE
-17346-28		PLATE
-17349-11	B2	DOUBLER
-17400-11	B2	CLIP
-17409-11	A1	DOUBLER
LDW280-17409-13		DOUBLER
LDW280-17443-17	A5	STIFFENER
LDW280M17108-4	D1	CAP STRIP
M17138-5	D1	ANGLE
M17154-1	B1	CAP STRIP
M17186-1	A3	SUPPORT
M17226-1 thru -3	B1	ANGLE
M17228-8	C2	SUPPORT
M17229-8	C3	SUPPORT
M17260-1	A2	ANGLE
LDW280M17285-1	A4	SUPPORT

NAS 9-1100

* USE APPLICABLE DASH NO IN DESCRIP OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: ADDITION OF AMBIENT He TANK

DESCRIPTION OF EO: FOR-* N/A WAS LDW280-25531 EFF LTA-5, 8 & LEM-1
ADDED N/A LDW280-28531 FOR LTA 5 & LEM-1

GAEC ECO RELEASE: LE 7-18-66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	
LEM		LEM 1(31)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: NOT REQ'D REWORK	SCRAP

APPROVED BY								
DATE								
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG	CONT
							7-2-66	

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 161

ORIG. BY: J. Backfish / J. STRAKOSCH SECTION: VEHICLE DESIGN GROUP NO. 335 PL 35

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 308
CONTROL INFO NO. LDW280A1001

ENG 52.2 REV 3-65

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS * THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-17344	B1	SEE DRAWING
-17347	B1	
-17348	C1	
-17349	B3	
-17352	A2	
-17354	B1	
-17356	B1	
-17365	B2	
-17366	C1	
-17369	A2	
-17379	C1	
-17380	B1	
-17381	B1	
-17382	A1	
-17383	A1	
-17384	B2	
-17385	C1	
-17388	D??	
-17393	B2	
-17395	C2	
-17397	B1	
-17398	B1	
-17399	C1	
-17400	B3	
-17412	B1	
-17413	C1	
-17414	B2	
-17415	B1	
-17416	B1	
-17417	B1	
-17418	B1	
-17419	B1	
LDW280-17420	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: ADDITIONAL REQUIREMENTS

DESCRIPTION OF EO: FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.

GAEC EO RELEASE: FR 10/15/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40)	
LEM		LEM-11(41), LEM-12(42),	
LEM		LEM-13(43), LEM-14(44), LEM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: NOT REQ'D REWORK | SCRAP

APPROVED BY: DATE ✓ | SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG

DATE: 10/15/66 | 11-11-66

PL: C | DRAWING TITLE: NOTED | DRAWING NO.: LEO280 | EO NO.: 302

ISSUED BY: M. GREY / J. STRAŁOSCH X1153 | SECTION: VEHICLE DESIGN INT. | GROUP NO.: 280 | PL: 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.2 REV 3-65

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A6132		

FOR ALL DASH NO.'S ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING #	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17282		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ | | CL II ENGRG CHG | | CL I ENGRG CHG | | LCD19-1242 | 2

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

(R) GAEC EO RELEASE: JK 4/4/67 C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R (96)	

DRAWING CHANGE REQD: REVISE DWG / RECORD EO

DISPOSITION OF PARTS: NOT REWORK / RQD SCRAP

	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGR	PROJ ENGR
					4/5/67	4/4/67		3-30-67
5	YDI	3/28/67						

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 541

ISSUED BY: G. BECKER/J. STAKOSCH X1153 SECTION: YDI GROUP NO.: 335 PL: 25

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LDW280-17349 | EO NO. B5
CONTROL INFO NO. LDW280A6235

IN MOD/BLK FOR THE FOLLOWING EFF REVISE N/A AS SHOWN

DASH NO	EFF	NEW N/A	OLD N/A
-11	*	LDW280-54531	LDW280-23531
-11	*	LDW280-54533	LDW280-23533
-13	*	LDW280-54533	LDW280-23533

ALL EFF REMAIN THE SAME

* LM-4(34) THRU LM-15(45)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG: 1 | 2

REASON FOR EO: INCORRECT N/A

DESCRIPTION OF EO: FOR -11 EFF * N/A WAS LDW280-23531 & LDW280-23533 FOR -13 EFF * N/A WAS LDW280-23533

GAEC EO RELEASE: JK 4/1/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY					
											GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
LM		LM-4(34) THRU LM-15(45)		✓		NOT REQD		DATE 6/8/67	VDI		4/1/67	4/10/67		4-11-67
				PRIORITY: C		DRAWING TITLE: D/S a LM AFT DOUBLER BEAM TRIP TANK SPT					DRAWING NO.: LDW280-17349			EO NO.: B5

ISSUED BY G. BARNES/J. STRACISCH X1153 SECTION YDI GROUP NO. 335 PL 25

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 1374
CONTROL INFO NO. LDW280B7394

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17323 ✓	B3	SEE DWG
-17327 ✓	B4	
-17330 ✓	E1	
-17337 ✓	D1	
-17341 ✓	E1	
-17343 ✓	C3	
-17344 ✓	B3	
-17347 ✓	B3	
-17348 ✓	C4	
LDW280-17349 ✓	C1	SEE DWG

* APPLICABLE DASH NOS

✓ LCD 3587 PKG 50 PG. 8 CCA 1821 (G)

LM-15(45) NO LONGER REQD. | DELETED LM-15(45) EFF FROM *

LM | LM-15(45) | C | SEE DWG | LEO 280 | 1374

ISSUED BY MEVORAH / THORTUSEN 186096 SECTION YEH DES INT GROUP NO 335-25

01

NAS 9-1100

ENG 32.1 REV 2-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1541
CONTROL INFO NO. LDW 280B 8079

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40) [redacted]
ADD LTA-11 ([redacted] 23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING NO *	TITLE	CHANGE NO
LDW280-17337	SEE DWG	D2
341		E2
343		C4
344		B4
347		B4
348		C5
349		C2
356		B4
362		B6
LDW280-17327	SEE DWG	B5

DETAIL SPEC REQ. | CL II ENGRG CNG | CL I ENGRG CNG | ✓ | LCD 3890 PKG 99 PG 3-445 & 96 (5)

REASON FOR EO
NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO
ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: A 8-8-69; VDI 8/8/69; Gaumann 8-9-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11 ([redacted] (23)	

DRAWING CHANGE REQD: ✓ REVISE DWG; RECORD EO
DISPOSITION OF PARTS: NAT REQ'D; REWORK; SCRAP
APPROVED BY: PBT; DATE 7-29-69; VDI
SUPPORT | RELIAB GROUP | GROUP LEADER: [redacted] 8/8/69 | STRESS GROUP: M 8-2-69 | LIAISON ENGRG | PROJ ENGRG: [redacted] 8-9-69
PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO.: LEO 280
EO NO.: 1541

8-12-69 ISSUED BY G. HANSMANN X87222 (ML) SECTION VDI GROUP NO 335 PL 25

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY [1]	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY [2]	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
				LEM	LDW 280-28524	LEM-1 (31)	1 EA	LEM	LDW280-25527	LEM-1 (31)	1 EA
				LEM	LDW 280-28524	LTA-8 (18)	1 EA	LEM	LDW 280-25527	LTA-8 (18)	1 EA
				LEM	LDW 280-25524	LTA-5 (15)	1 EA	LEM	LDW 280-25527	LTA-5 (15)	1 EA
PART NO.		GAEC SCH NO.		PART NO. LDW280-17351-15, &-17		GAEC SCH NO. 5/4		PART NO. LDW 280-17351-11, &-13		GAEC SCH NO. 5/-4	

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1	1.10	2	3						
REV	A	A								
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED		GRUMMAN REL INFO	
LAST DASH NO. USED	-17	PRIM NO.	VEL(001) 207 PP1.0

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES ±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO.	NAS 9-1100	LINE ITEM	#1
DRAWN BY	J. BIANCHINO 11/2/65	RELIABILITY	
LAYOUT BY	STEA/BENTLEY 11/24/65		
CHECKED BY	11-13-65		
GR LEADER	11/24/65		
VEH DES INT	11/13/6		
STRUCTURES	KC 12/15	PROJ ENGR	12/8
STRUCTURES	12/7	REL GROUP	
WEIGHTS	12/2	RELEASE	12/8/65

DOCUMENTATION TYPE III

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER
DESCENT STAGE -
RIGHT HAND & AFT END BULKHEADS

SIZE	CODE IDENT NO.		
B	26512	LDW280-17351	A

SCALE NONE SHEET 1 OF 4

ENG 77.1 9-64

SWP

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1, 1.10						LE0280-162 (R)	FOR -15 & -17 N/A WAS LDW280-25531 EFF LTA-5, -8 & LEM-1 ADDED N/A LDW280-28524 FOR LTA-8(18) LEM-1(31). ADDED SH. 1.10. (SB)	LEM-1(31) LTA-8(18)	NOT	REQ'D	GARY KRADES 9-2-66		X

CHG APPROVED	LTR	GROUP LDR	VEH DES. INT.	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY					
	A											

ENG 77.16 3-66

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17351	A

SCALE NONE SHEET 1.10

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17351-17	E	STIFFENER	AL ALLOY SH	QQ-A-250/12	7075	.063 x 3 1/8 x G5 3/8	TG	88	
		- 15						.063 x 3 1/8 x G5 3/8			
		- 13						.063 x 3 1/8 x G5 3/8			
		LDW280-17351-11	E	STIFFENER	AL ALLOY SH	QQ-A-250/12	7075	.063 x 3 1/8 x G5 3/8	TG	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
TG	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

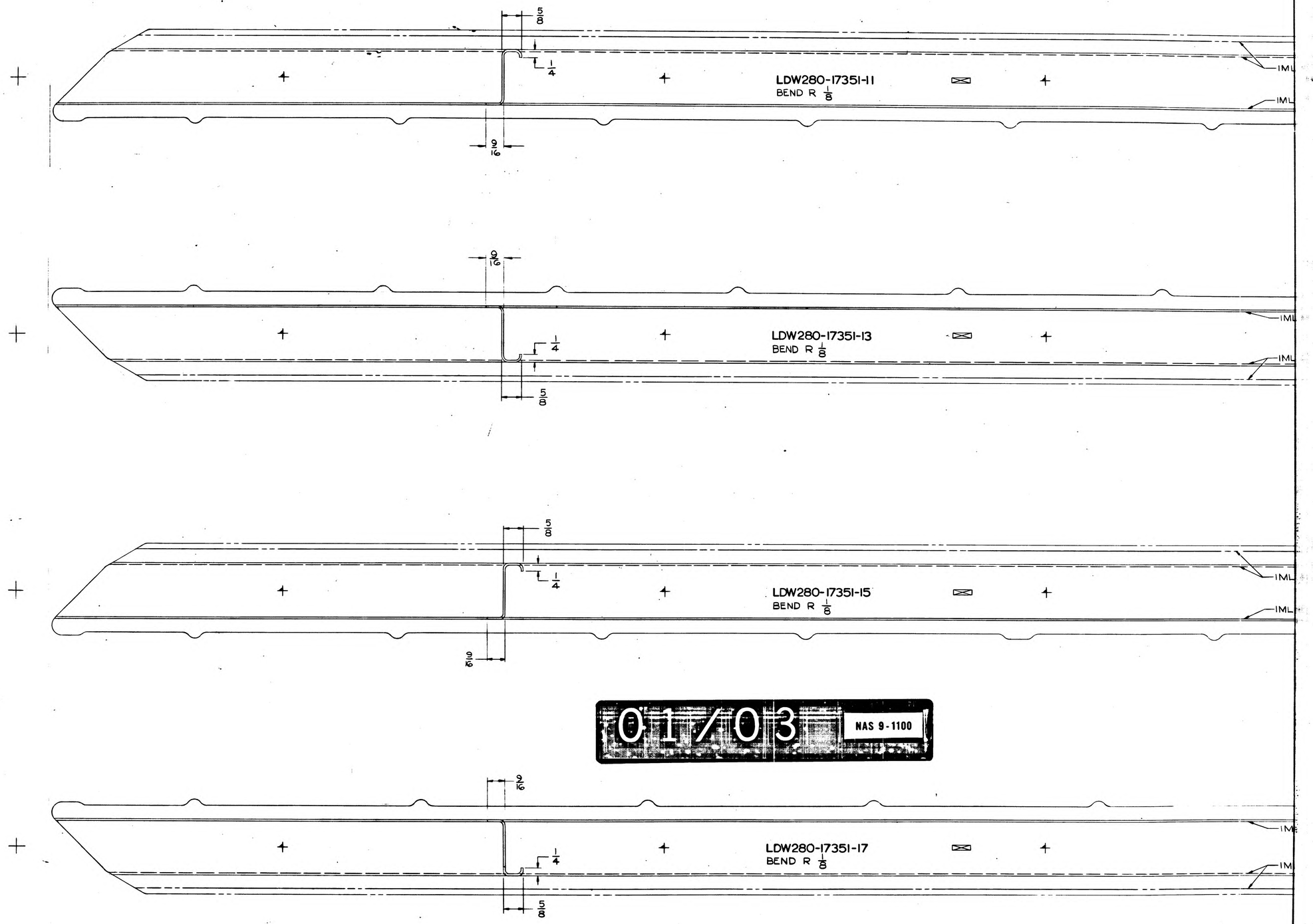
SIZE	CODE IDENT NO.	
B	26512	LDW280-17351

SCALE NONE SHEET 2

LNG 77.2 7-65

01

NAS 9-1100



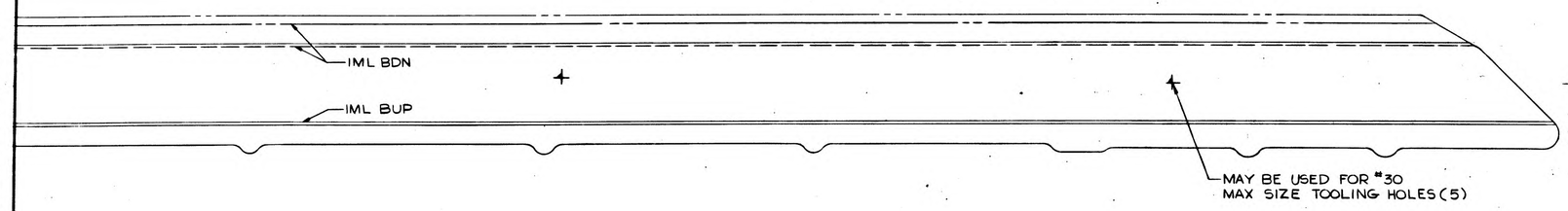
01/03 NAS 9-1100

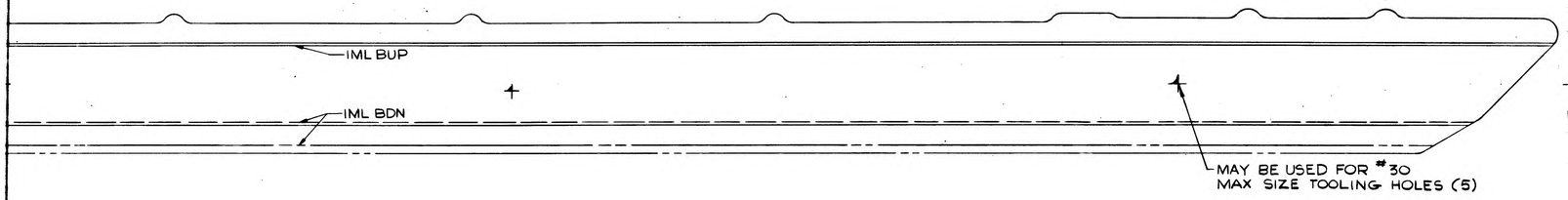
CODE IDENT NO. 26512	
LDW 280-17351	SH 3

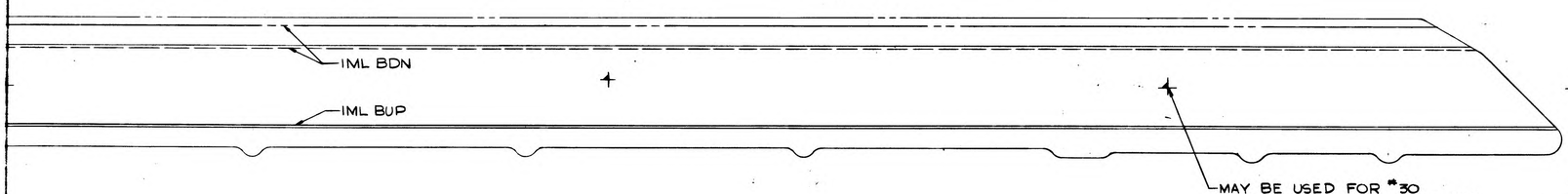
3/3

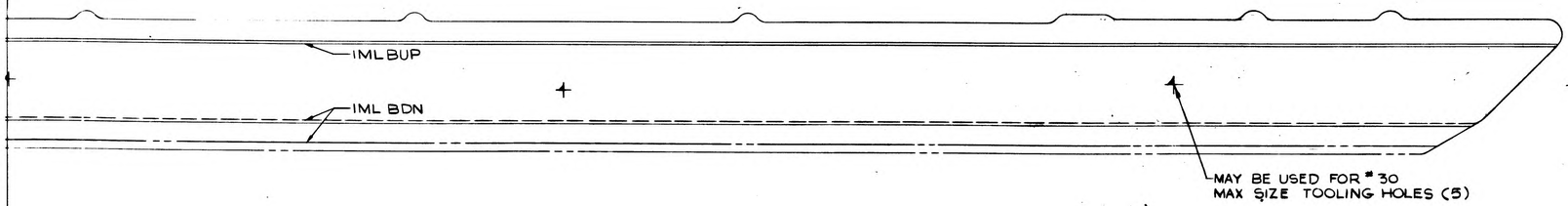
CHECK AFLC & PART TRIM ONLY
B.F.

TRIM
B.F.









NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS EXCEPT AS NOTED.

02/03

NAS 9-1100

MANUFACTURIN
UNLESS OTHERW
NOTES CHECKED

RUBBER STAMP PART
AND ALL OTHER MARKI
IN VISION MARKED
USI. BOTH SIDES IF NE

FILLET AND INSIDE COR
BASI TOLERANCES
.030R TO .062R
.063R TO .250R
OVER .250R

DEPTH SHOWN FOR TA
HOLES IS FULL THDS.
BE IOND PERMISSIBLE

EXTERNAL THREAD LEN
SHOWN INCLUDES
2 IMPERFECT THREADS

BE NOT CADMIUM PLA
HOLES OR SURFACES M
WITH DOUBLE ASTERIS

MISMATCH STEP OF
PERMISSIBLE DUE TO
OR CUTTERS AT INSIDE
INTERSECTING SURFACE

DIAMETERS MARKED
MUST BE CONCENTRIC
FI
READING.

HOLES MUST BE KEPT
CHROME PLATING SOLU

ALL DIMENSIONS SHOW
AFTER CADMIUM PLATI
THICKNESS OF PLATE
TC .0001 MAX. MIN TH
BE .0002 ON THREADED
NO ALLOWANCES FOR
HOLES

125 SURFACE ROU
INCLUDING RI
PER MIL-STD-

250 FOR ALL DRIL

REMOVE ALL BURRS.
BREAK ALL EDGES .01

INSPECTION INFORMATI
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANC
MARKED IS

SYMBOL △ DENOTES
TO BE MACHINED

UNLESS OTHERWISE SP
TOLERANCE ON FLANGE

LENGTHS OF AN. NAS
RIVETS SHORTER THAN
NOT SPECIFIED

TOLERANCE ON LOFTE
DELINEATIONS IS ±

CODE IDENT NO. 26512
LDW 280-17351 SH 3

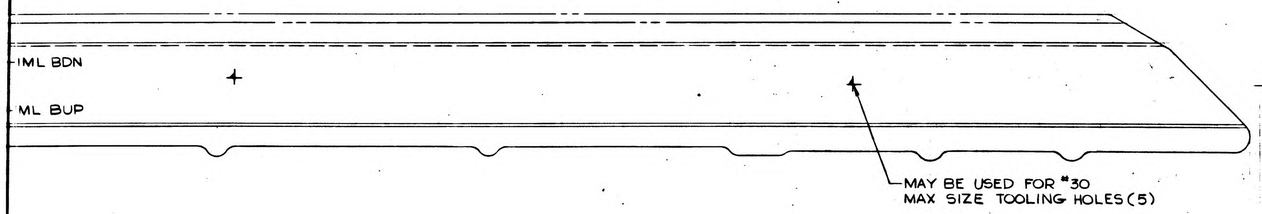
CODE IDENT NO. 26512
LDW 280-17351 SH 3

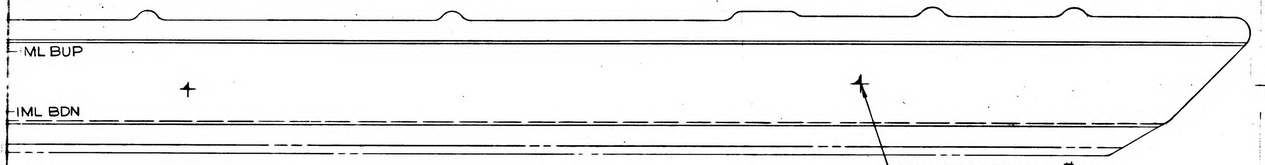
LEM
MAJOR ASSEMBLY ITEM
GRUMMAN AIRCRAFT ENGI G. CORP. BETHP
SIZE J | CODE IDENT NO. 26512 | LDW280-
SCALE FULL

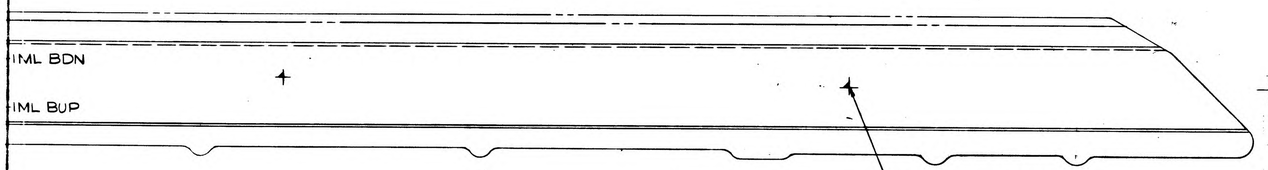
FOR PHOTO REPRODUCTION

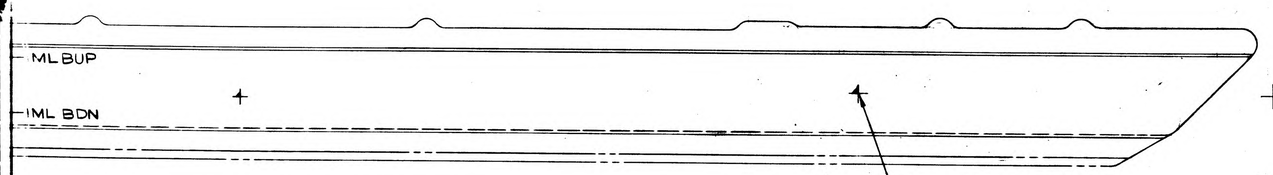
CHECK OFLG & PART TRIM ONLY D.J.

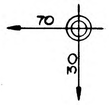
TRIM D.J.











NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS EXCEPT AS NOTED.

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING.	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 √ SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 √ FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL X DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

DWG SIZE 34-94

PRINTING INFO ONLY

SQ. FT.
SQ. FT.

FULL SIZE SHEET AREA (36 x 96) = 21.0
½ SIZE SHEET AREA (¼ OF FULL) = 5.25

PRINT TRIM LINE

C

B

A

LDW280-17351

LDW280-17351

03/03

NAS 9-1100

LEM
MODEL OR END ITEM

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
J	26512	LDW280-17351

SCALE FULL SHEET 3

CODE IDENT NO. 26512
LDW280-17351 SH 3

FOR PHOTO REPRODUCTION

K2

DRG 757 644

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO 280		EO NO. 162
CONTROL INFO NO. LDW 280-8031		

ON THE FOLLOWING DRAWINGS FOR DASH NO'S NOTED * - RESTRICT N/A LDW 280-25524 TO LTA 5 (15) ONLY
ADD N/A LDW 280-28524 FOR LTA 8 (18) & LEM 1 (31)
QUANTITIES REMAIN THE SAME

DWG NO	CHG NO	TITLE
✓LDW 280M17471 -4	A1	FITTING
LDW 280M17471 -3		FITTING
✓LDW 280M17230 -6	C4	STIFFENER
LDW 280M17230 -5		STIFFENER
✓LDW 280M17141 -3	C4	FITTING
✓LDW 280M17140-2	B1	↕
LDW 280M17140 -1		
✓LDW 280M17136 -5	C4	FITTING
✓LDW 280M17118- 1	C1	CAPSTRIP
✓LDW 280M17113 -4	D5	CAPSTRIP
✓LDW 280M17105-17	E2	CORNER POST
✓LDW 280M17104 -6	E2	CORNER POST
✓LDW 280-17617 -15	B3	PLATE
✓LDW 280- 17614 -15	B2	PLATE
LDW 280- 17496-11	A1	PAD
LDW 280-17429-13	A5	DOUBLER
LDW 280- 17429-11		ZEE
LDW 280 - 17351 -17	A1	STIFFENER
LDW 280 - 17351 -15		STIFFENER
LDW 280-17341 -13	C3	DOUBLER
LDW 280-17196 -11	B2	TEE
LDW 280- 17154 -12	A4	STIFFENER
LDW 280-17154 -11		STIFFENER
LDW 280-17152 -17	B1	PLATE
↕ -14		ANGLE
-13		↕
-12		
LDW 280-17152 -11		ANGLE
LDW 280-17150 -19	C1	CLIP
LDW 280-17150 -12		CLIP
LDW 280-17150 -11		CLIP
LDW 280-17148 -14	B1	ANGLE
↕ -13		↕
-12		
LDW 280- 17148 -11		
LDW 280-17147 -18	C1	
↕ -17		
-16		
-14		
-13		
LDW 280-17147 -11		
LDW 280-17146 -26	C1	
↕ -25		
-24		
-23		
-20		
LDW 280-17146 -19		ANGLE
LDW 280-17124 -17	B5	WEB
LDW 280-25516 -5	B1	TRUSS INSTL

* USE APPLICABLE DASH NO IN DESCRIPTION OF E.O.

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO: ADDITION OF AMBIENT HE TANK

DESCRIPTION OF EO: FOR - * N/A WAS LDW 280-25531 EFF LTA-5, -8 & LEM-1 ADDED N/A LDW 280-28524 FOR LTA 8 (18) LEM 1 (31)

GAEC EO RELEASE: INCP 7/13/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM 1 (31)	
LEM		LTA 8 (18)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG	GDMC
✓		NOT REQD		VDF	6:3:66				6/7/66		7/1/66	7-2-66

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO 280	162

ISSUED BY AMBROSIO X 1156 SECTION VEH DES INT GROUP NO. 335 PL 35

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17352-11	LEM	GAEC SCH NO. 51-4	
	LDW280-23527	LEM-6(36)	1
		LEM-5(35)	1
		LEM-4(34)	1
		LEM-3(33)	1
		LEM-2(32)	1
	LDW280-23527	LTA-3(13)	1
	LDW280-25527	LEM-1(31)	1
	LDW280-25527	LTA-8(18)	1
	LDW280-25527	LTA-5(15)	1

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1		2	3						
REV										
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED		GRUMMAN REL INFO	
LAST DASH NO. USED	-11	PRIM NO. LC(001) 207 PP 12	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100		LINE ITEM # 1	DOCUMENTATION TYPE II
DRAWN BY	L.BRIDA 10-28-65	RELIABILITY	GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK
LAYOUT BY	LILANO		STIFFENER
CHECKED BY	10-11-65		DESCENT STAGE ~ AFT END BULKHEAD
GP LEADER	11/10/65		OXYGEN TANK SUPPORT
VEH DES INT	11/11		
STRUCTURES	12/17/65	PROJ ENGR	SIZE B CODE IDENT NO. 26512 LDW280-17352
STRUCTURES	12/17	REL GROUP	SCALE NONE SHEET 1 OF 3
WEIGHTS	12/20		

ENG 77.1 9-64

SWIP

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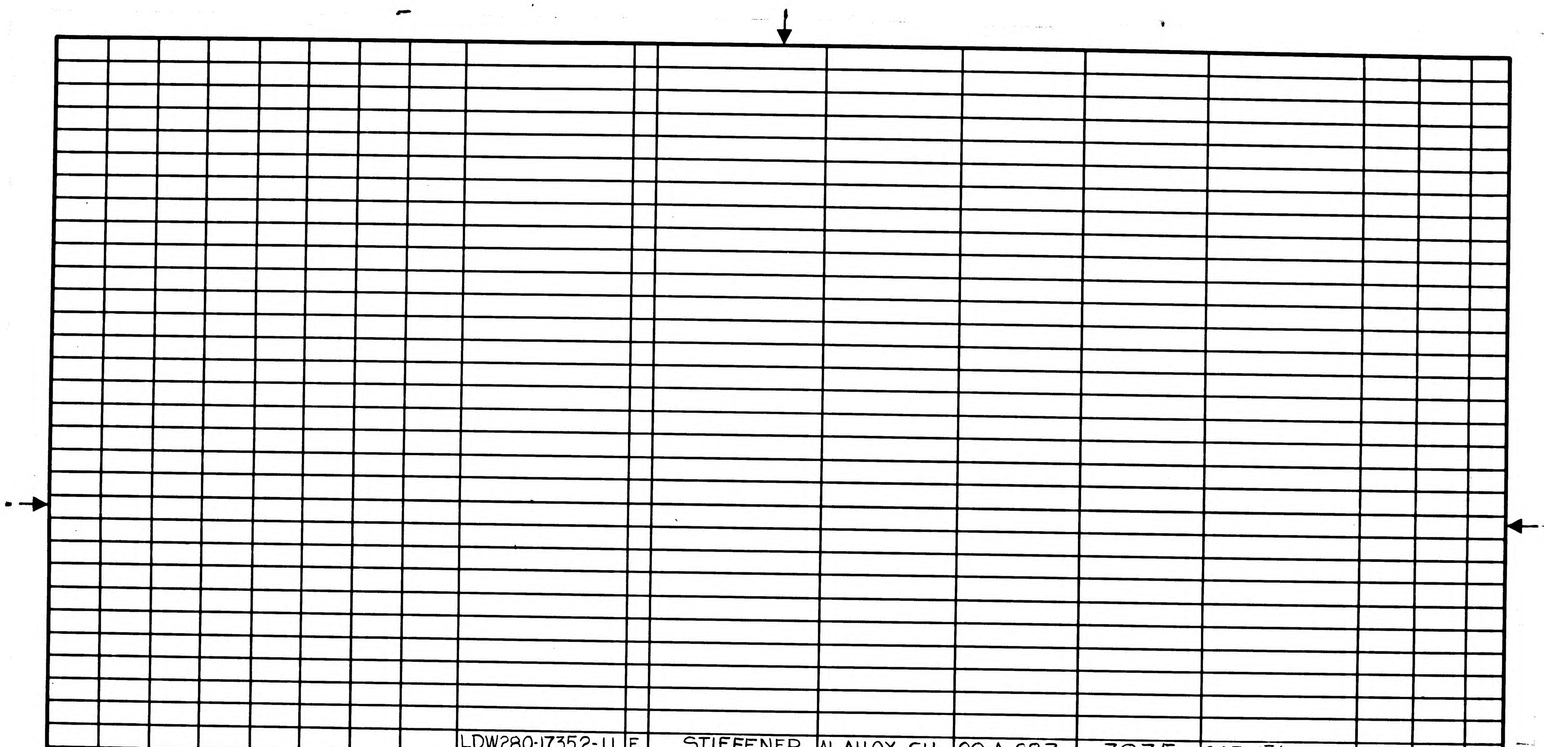
NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17352-11	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.045 x 13¾ x 13	T6	38	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP 14-9030
T6	AL HT TREAT	MIL-H-6088

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17352

SCALE NONE SHEET 2

ENG 77.2 7-65

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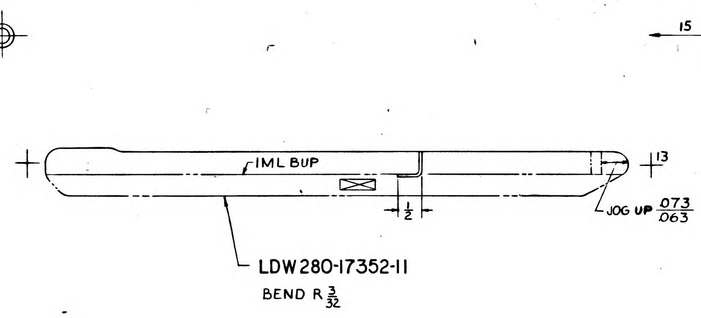
NAS 9-1100

NOTE:
1. NO TOOLING HOLES PERMITTED IN PART.



MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √APPLY TO THIS DWG	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ▭ USE BOTH SIDES IF NECESSARY	√
TOLERANCE ON LOFTED DELINEATIONS IS ±1/32	√

LDW280-17352

NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK		
LEM	SIZE C	CODE IDENT NO. 26512	LDW280-17352
MODEL OR END ITEM	SCALE FULL		SHEET 3

FOR PHOTOREPRODUCTION

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ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280		EO NO. 122
CONTROL INFO NO. LDW280-6856		

FOR THE NOTED PART NOS., REVISE M/B AS FOLLOWS:
NOW: N/A LDW 280-23527 EFF: LTA-3(13), LEM-2(32), LEM-3(33)
N/A LDW 280-54527 EFF: LEM-4(34), LEM-5(35), LEM-6(36)
WAS: N/A LDW280-23527 EFF: LTA-3(13) LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35) LEM-6(36)

PART NO.*	CHG NO.	DWG TITLE
LDW280-17127-17 ✓	B4	SEE DWG
LDW280-17145-11,-12 ✓	B3	
LDW280-17149-13 ✓	B4	
LDW280-17151-11 ✓	B3	
LDW280-17352-11 ✓	A1	
LDW280M17112-3	D1	SEE DWG

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓		
REASON FOR EO: WEIGHT CONTROL REQUIREMENTS				DESCRIPTION OF EO: REVISED M/A FOR PART NO.* WAS N/A LDW 280-23527 EFF. LEM-4(34), LEM-5(35), LEM-6(36)			

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LEM		LEM-4(34)	
		LEM-5(35)	
		LEM-6(36)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓		NOT REQ'D	

PRIORITY: C
DRAWING TITLE: SEE DWGS
DRAWING NO.: LEO 280
EO NO.: 122

APPROVED BY	DATE	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG
[illegible]	3/13/66	[illegible]	—	—	—	[illegible]
[illegible]	5/27		—	—	—	[illegible]
VDI	[illegible]					

(R) GAEC EO RELEASE: 4/2/10

ISSUED BY G BECKER/J STRAKOSCH X1153 SECTION VEH. DESIGN INT GROUP NO. 335 PL 35

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280 | EO NO. 308
CONTROL INFO NO. LDW280A1001

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS * THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-17344	B1	SEE DRAWING
-17347	B1	
-17348	C1	
-17349	B3	
-17352	A2	
-17354	B1	
-17356	B1	
-17365	B2	
-17366	C1	
-17369	A2	
-17379	C1	
-17380	B1	
-17381	B1	
-17382	A1	
-17383	A1	
-17384	B2	
-17385	C1	
-17388	P22	
-17393	B2	
-17395	C2	
-17397	B1	
-17398	B1	
-17399	C1	
-17400	B3	
-17412	B1	
-17413	C1	
-17414	B2	
-17415	B1	
-17416	B1	
-17417	B1	
-17418	B1	
-17419	B1	
LDW280-17420	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
			ADDITIONAL REQUIREMENTS	FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.	FR 10/13/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: NOT REQ'D	REWORK	SCRAP	APPROVED BY: DATE	VP	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
LEM		LEM-7(37) LEM-8(38) LEM-9(39)	LEM-7(37) LEM-8(38) LEM-9(39)						10/5/66							
LEM		LEM-10(40) LEM-11(41) LEM-12(42)	LEM-10(40) LEM-11(41) LEM-12(42)						11-11-66							
LEM		LEM-13(43) LEM-14(44) LEM-15(45)	LEM-13(43) LEM-14(44) LEM-15(45)	PS C												

DRAWING TITLE: NOTED
DRAWING NO.: LE0280
EO NO.: 302

ISSUED BY: M. GREY / J. STRAKOSCH X1153 SECTION: VEHICLE DESIGN INT. GROUP NO.: 280 PL: 35

NAS 9-1100

ENG 32.2 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 541
CONTROL INFO NO. LDW280A 5132

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

LDW280-1242 2

DETAIL SPEC REQ | CL II ENGRG CHG [/] | CL I ENGRG CHG

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

(B) GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R (46)	

DRAWING CHANGE REQD: REVISE DWG [/] | RECORD EO
DISPOSITION OF PARTS: NOT REWORK | REQD SCRAP
APPROVED BY / DATE: 5 YDI | SUPPORT | RELIAB GROUP | GROUP LEADER 3/29/67 | STRESS GROUP 3/29/67 | LIAISON ENGRG | PROJ ENGRG 3-30-67
PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 541

ISSUED BY G. BECKER/J. STARKSCH X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 1347
CONTROL INFO NO. LDW280B 7395

FOR THE DWGS LISTED BELOW DELETE LM-15 (45) EFF
FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17352 ✓	A4	SEE DWG
-17354	C1	
-17356	B3	
-17362	B5	
-17365	B4	
-17366	C3	
-17369	A5	
-17325	C1	
-17379	D4	
LDW280-17381	B3	SEE DWG

* APPLICABLE DASH NOS (5)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. 10 CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM -*

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	—	LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | REWORK | DISPOSITION OF PARTS: SCRAP ✓

APPROVED BY: DATE 4/16/69 VDI | SUPPORT | RELIAB GROUP | GROUP LEADER 4-24-69 | STRESS GROUP 4/18/69 | LIAISON ENGRG | PROJ

GAEC ED RELEASE: 4/16/69

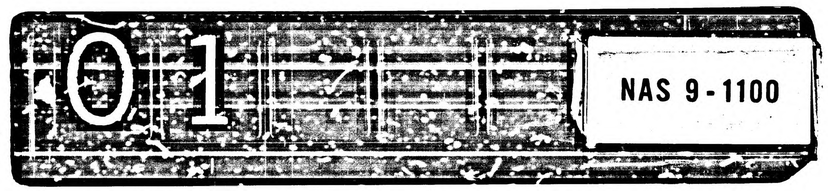
PRIORITY: C

DRAWING TITLE: SEE DWG

DRAWING NO.: LEO 280

ED NO.: 1347

105 2869 ISSUED BY MEVORAH / THORTUSEN X86046 SECTION VEH DES INT GROUP NO. 335 P. 25



GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 1712

CONTROL INFO NO. LDW280B7958

FOR DASH NO.'S* NOTED ON THE FOLLOWING DWGS., REMOVE LM-10(40) THRU LM-14(44) EFF.

DRAWING NO.	DASH NO.*	TITLE	N/A	CHG.
LDW280-17352	-11	SEE DWG.	LDW280-54527	A5
↕ -17454	-13	↕	↕ -54527	B4
↕ -18427	-15	↕	↕ -54527	B5
LDW280-54527	-21, -23	SEE DWG.	LDW280-54510	G9

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3994 PKG 62

REASON FOR EO: EPS BATTERIES RELOCATED FROM QI & IV TO -Z BULKHEAD

DESCRIPTION OF EO: FOR * REMOVED LM-10(40) THRU LM-14(44) EFF.

GAEC / EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-10(40)	
		THRU	
		LM-14(44)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK | SCRAP ✓

APPROVED BY / DATE: VDI 9/29/69 | SUPPORT | RELIAB. GROUP | GROUP LEADER 9-29-69 | STRESS GROUP 9/26/69 | LIAISON ENGRG | PROJ ENGRG 10/1/69

PRIORITY: C

DRAWING TITLE: SEE DWG.

DRAWING NO.: LEO 280

EO NO.: 1712

CDR 10/20/69

ISSUED BY L. KRAVITZ/THORJUSEN x87222 SECTION VEH. DES. INT. GROUP NO. 335 PL 25

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NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.	GAEC SCH NO.		

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.	GAEC SCH NO.		

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-25526	LEM-1(31)	1 EA
	LDW280-25526	LTA-8(18)	1 EA
	LDW280-25526	LTA-5(15)	1 EA
	LDW280-23526	LEM-6(36)	1 EA
		LEM-5(35)	1 EA
		LEM-4(34)	1 EA
		LEM-3(33)	1 EA
		LEM-2(32)	1 EA
LEM	LDW280-23526	LTA-3(13)	1 EA
PART NO. LDW280-17353-11&12		GAEC SCH NO. 51-4	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1		2	3						
REV										
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED		GRUMMAN REL INFO	
LAST DASH NO. USED	-12	PRIM NO.	LE(001)
			207. PP10

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS — DECIMALS — ANGLES
± 1/32 ± .020 ± 1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100		LINE ITEM	DOCUMENTATION TYPE II
DRAWN BY	J.OTTE 7/2/65	RELIABILITY	F.S. Douglas 9/28
LAYOUT BY	BENTLEY 8/12/65		
CHECKED BY	C.J.R. 9-16-65		
GP. LEADER	J. Steadman 9/23/65		
VEH. DES. INT	[illegible] 9/23		
STRUCTURES	[illegible] 9-23-65		
STRUCTURES	[illegible] 9-25	PROJ ENGR	[illegible] 9/29
WEIGHTS	V. B. Mauritzen 9/29	RELEASE	[illegible] 9/30

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

ZEE
DESCENT STAGE - FWD END BULKH'D.
INGRESS/EGRESS SUPPORT

SIZE	CODE IDENT NO.	
B	26512	LDW280-17353

SCALE FULL NONE | SHEET 1 OF 3

ENG 77.1 9-64

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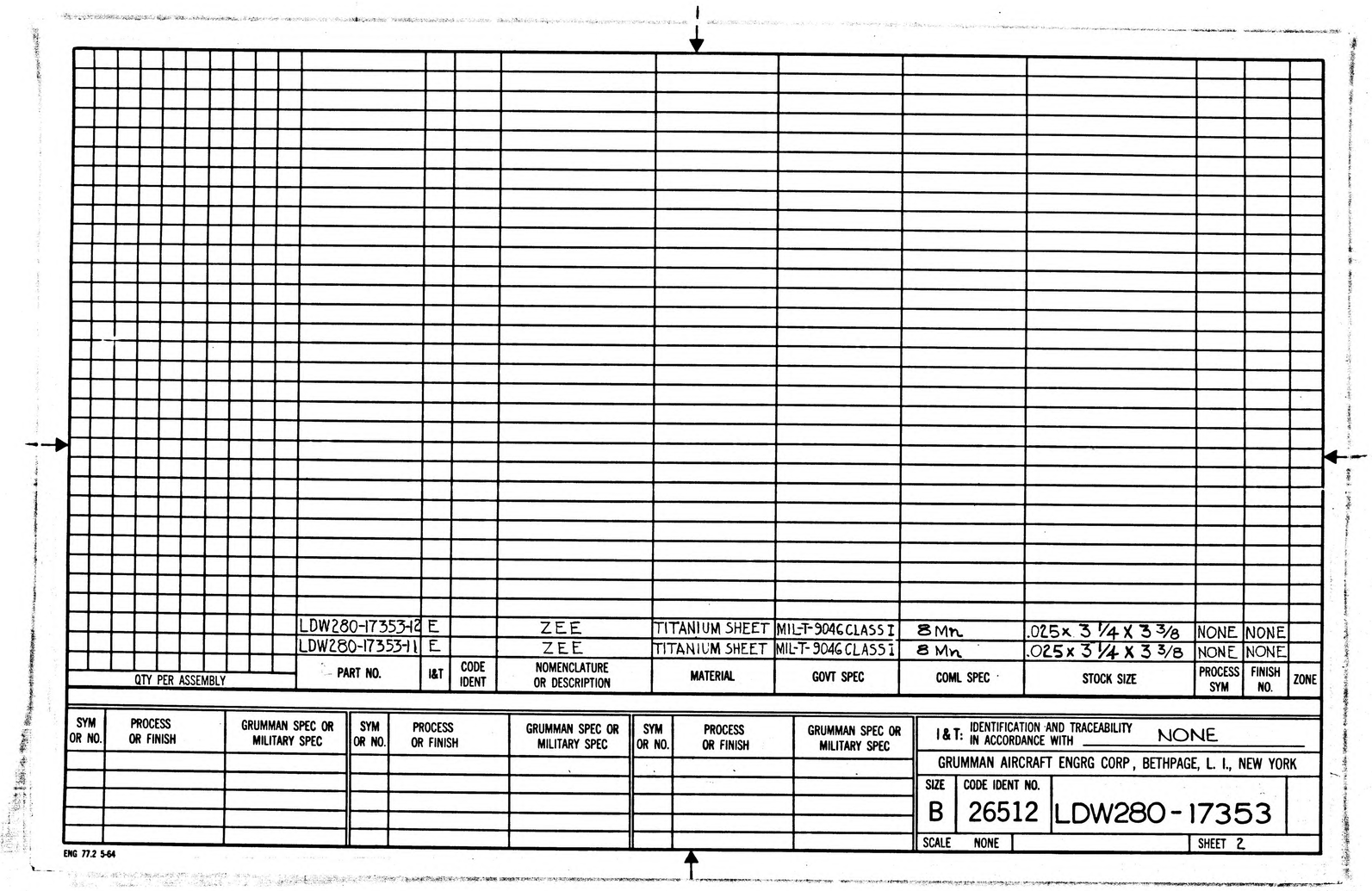
NAS 9-1100



QTY PER ASSEMBLY	PART NO.	I&T	CODE IDENT	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
	LDW280-17353-2	E		ZEE	TITANIUM SHEET	MIL-T-9046 CLASS I	8 Mn	.025 x 3 1/4 X 3 3/8	NONE	NONE	
	LDW280-17353-1	E		ZEE	TITANIUM SHEET	MIL-T-9046 CLASS I	8 Mn	.025 x 3 1/4 X 3 3/8	NONE	NONE	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17353

SCALE NONE SHEET 2

ENG 77.2 5-64

01

NAS 9-1100

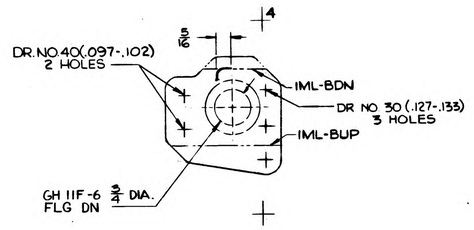
NOTE
1. NO TOOLING HOLES PERMITTED IN PARTS.

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG.

RUBBER STAMP PT NO AND ALL OTHER MARKINGS IN REGION MARKED ✓

15
10

LDW280-17353-11 (SHOWN)
BEND R 9/64 -12 (OPP)



LDW280-17353

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK		
L.E.M.	SIZE C	CODE IDENT NO. 26512	LDW280 - 17353
MODEL OR END ITEM	SCALE FULL		SHEET 3

FOR PHOTO REPRODUCTION

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280-17353		EO NO. A1
CONTROL INFO NO. LDW280-4664		

IN M/B REMOVE REQUIREMENTS FOR LDW 280-17353-11 & -12 ON NEXT ASSEMBLY LDW 280-23526 FROM LTA-3(13), LEM-2 (32), LEM-3(33), LEM-4(34), LEM-5(35), & LEM-6(36).

(2)

DETAIL SPEC REQ		Cl II ENGRG CHG		Cl I ENGRG CHG	✓	

REASON FOR EO
NEW PARTS REQ'D FOR INCREASED LOADS IN INGRESS/EGRESS PLATFORM

DESCRIPTION OF EO
IN M/B REMOVED REQUIREMENTS FOR LDW280-17353-11&12 ON N/A LDW280-23526 FROM LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35) & LEM-6(36)

GAEC EO RELEASE: AD/LE — WD — 1/10/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LEM		LTA-3(13) LEM-2(32)	
LEM		LEM-3(33) LEM-4(34)	
LEM		LEM-5(35) LEM-6(36)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	-11 / -12 SCRAP	APPROVED BY	DATE							
✓			-11 -12		VD1							
					11/7/70				12/1/65			

PRIORITY	DRAWING TITLE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	DRAWING NO.	EO NO.
C	ZEE DESCENT STAGE-FWD END BHD. INGRESS/EGRESS SUPPORT							LDW280-17353	A1

JVB
ISSUED BY STEA/STRAKOSCH SECTION VEH DES. INT GROUP NO. 335 PL 22

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
	LDW280-23534	LM-3(33)	1
LM	LDW280-23534	LM-2(32)	1
	LDW280-25534	LM-1(31)	1
	LDW280-23534	LTA-3D/R	1
	LDW280-25534	LTA-8(18)	1
LM	LDW280-25534	LTA-5(15)	1

PART NO. LDW280-17354-13

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
	LDW280-54537	LTA-3D/R	1EA
LM	LDW280-54537	LM-15(45)	1EA
		THRU	
	LDW280-54537	LM-7(37)	1EA
	LDW280-54537	LEM-6(36)	1EA
	LDW280-54537	LEM-5(35)	1EA
	LDW280-54537	LEM-4(34)	1EA
	LDW280-52537	LEM-3(33)	1EA
	LDW280-52537	LEM-2(32)	1EA
	LDW280-23537	LTA-3(13)	1EA
	LDW280-51537	LEM-1(31)	1EA
	LDW280-25537	LTA-8(18)	1EA
LM	LDW280-25537	LTA-5(15)	1EA

PART NO. LDW280-17354-12 & -14

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
	LDW280-54534	LTA-3D/R	1
LM	LDW280-54534	LM-15(45)	1
		THRU	
	LDW280-54534	LM-7(37)	1
	LDW280-54534	LEM-6(36)	1
	LDW280-54534	LEM-5(35)	1
	LDW280-54534	LEM-4(34)	1
	LDW280-23534	LEM-3(33)	1
	LDW280-23534	LEM-2(32)	1
	LDW280-23534	LTA-3(13)	1
	LDW280-25534	LEM-1(31)	1
	LDW280-25534	LTA-8(18)	1
LM	LDW280-25534	LTA-5(15)	1

PART NO. LDW280-17354-11

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10	2.00	3.00					
REV	B	B							
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	
LAST DASH NO. USED	-14

GRUMMAN REL INFO B
PRIM NO. JK'001)
207 ME-3B-1/12/66

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS - ANGLES ±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 LINE ITEM # 1 DOCUMENTATION TYPE IT

DRAWN BY	L. BRIDA 10-27-65	RELIABILITY
LAYOUT BY	F. MADDEN	
CHECKED BY	J. S. 10-30-65	
GR LEADER		
VEH DESINT		
STRUCTURES		PROJ ENGR 11/15
STRUCTURES	11-11	REL GROUP 11/16
WEIGHTS	11-13	

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

ANGLE
DESCENT STAGE FWD LH & RH
BEAM PANEL, UPPER & LOWER

SIZE B | CODE IDENT NO. 26512 | LDW280-17354 | B (3)

SCALE NONE | SHEET 1.00 OF 4

ENG 77.1 9-64

01 NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1 & 1.10					✓	LEO-73 (B)	ON -12 & -14, NEXT/ASS'Y FOR LEM-1 WAS LDW280-25537. ADDED SHEET 1.10 SH 1 OF 4 WAS 1 OF 3.	LEM-1	NOT	REQ'D	SVOBODA 5-12-69		
B	1	1.00						LEO280-302	FOR-11,-12,-13 & -14 ADDED LEM-7(37) THRU LM-15(45) EFF.	LM-7 THRU LM-15	NOT	REQ'D	J. BISCALDI 1-3-69		
	2	1.00					✓	LEO280-541 LCD 19-1242	IN MOD/BLK FOR-11,-12,-13 & -14 ADDED LTA-3 D/R EFF	LTA 3 D/R					
	3	1.00		U		✓		EOB3 LCD 2011 CCA668	ON-13 REMOVED LM-4(34) THRU LM-15(45) EFF	LM-4 THRU LM-15		-13			
	4	1.00		D		✓		LEO280-765 LCD 2011 CCA668	FOR-13 REMOVED LTA-3 EFF.	LTA-3					
	5	1.00				✓		EOB5	REVISED MOD/BLK ON-11 EFF LM-4 THRU LM-15 & LTA-3 D/R N/A LDW280-54534 WAS LDW280-23534. ON-12 & -14 EFF LM-2 & LM-3 N/A LDW280-52537 WAS LDW280-23537. ON-12 & -14 EFF LM-4 THRU LM-15 & LTA-3 D/R N/A LDW280-54537 WAS LDW280-23537. (C)	LM-2 THRU LM-15 LTA-3 D/R	NOT	REQ'D	12-21-68		

FOR CONTINUATION OF REVISIONS SEE SHEET _____

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17354	B (B)
SCALE NONE			SHEET 1.10

ENG 77.3 5-65

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17354-14	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.056 X 2 X 14 3/4	T6	88	
		-13	E					.056 X 2 X 14 3/4	T6	88	
		-12	E					.040 X 1 3/4 X 14 1/2	T6	88	
		LDW280-17354-11	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.040 X 1 3/4 X 14 1/2	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT.	MIL-H-6088
88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW 280-17354

SCALE NONE SHEET 2

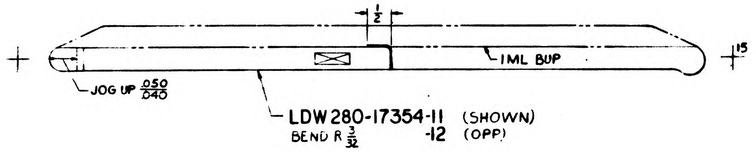
ENG 77.2 7-65

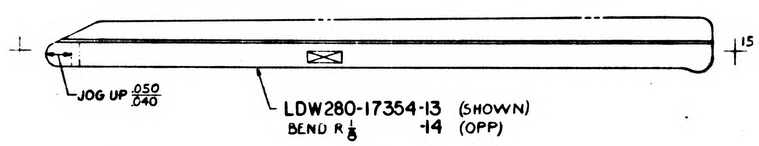
01

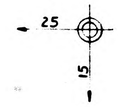
NAS 9-1100

LDW280-17354

NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.







MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

- RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS ON REGION MARKED ▭ USE BOTH SIDES IF NECESSARY ✓
- FILLET AND RADIUS CORNER RADII TOLERANCES
  0.000 TO 0.029 ± .010
  0.030 TO 2.500 ± .015
  OVER 2.500 ± .020
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS 2.1 DEP TOOL BEYOND PERMISSIBLE
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MIN.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE 0.000 MIN TO 0.000 MAX MIN THICKNESS TO BE 0.002 ON THREADED AREAS NO ALLOWANCES FOR PLATING IN HOLES
- 125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD-10
- 250 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS BREAK ALL EDGES .015-.030
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MEASURED IS
- DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF ALL RIVS & BIS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED
- TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32

LDW280-17354

GRUMMAN AIRCRAFT ENGNG CORP BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	LDW280-17354
D	26512	

LEM | MODEL OR END ITEM | SCALE FULL | SHEET 3

FOR PHOTOREPRODUCTION

NAS 9-1100

01

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 73
CONTROL INFO NO. LDW 280-5400

ENG 32.2 REV 3-65

FOR THE NOTED *PART NOS., N/A FOR LEM-1 NOW LDW 280-51537
(WAS LDW 280-25537)

LDW280-17158 *24	ANGLE	B2
LDW280-17158 *22		
LDW280-17157 *26		C1
*24		
*22		
*20		
LDW280-17157 *18		
LDW280-17156 *28		B1
*26		
*24		
*22		
LDW280-17156 *20		
LDW280-17155 *26		B1
*24		
*22		
LDW280-17155 *20	ANGLE	
LDW280-17137 *5	WEB	C1

CHG NO.

LDW280-17278 *20	CLIP	B1
LDW280-17278 *11	SUPPORT	
LDW280-17277 *17	ANGLE	B1
*15		
*13		
LDW280-17277 *11	ANGLE	
LDW280-17221 *13	ANGLE	A1
LDW280-17213 *11	ANGLE	A1
LDW280-17192 *15	DOUBLER	A3
LDW280-17164 *11	TEE CLIP	A1
LDW280-17163 *13	ANGLE	A2
LDW280-17163 *11	ANGLE	
LDW280-17162 *17	DOUBLER	B1
*15	DOUBLER	
*13	SHIM	
LDW280-17162 *11	SHIM	
LDW280-17161 *9	ZEE	B1
LDW280-17161 *15	ZEE	
LDW280-17161 *17	ZEE	
LDW280-17160 *14	STIFFENER	A2
LDW280-17160 *12	STIFFENER	

CHG NO.

LDW280M17223 *3	TEE	B2
LDW280M17223 *5	TEE	B1
LDW280M17227 *3	ANGLE	B1
LDW280M17227 *1	ANGLE	
LDW280M17133 *1	ANGLE	C1
LDW280M17114 *1	CAPSTRIP	B1
LDW280M17108 *1	CAPSTRIP	B2
LDW280-17400 *11	CLIP	A1
LDW280-17354 *14	ANGLE	A1
LDW280-17354 *12	ANGLE	
LDW280-17341 *21	DOUBLER	B1
LDW280-17331 *13	ANGLE	A1
LDW280-17331 *11	PLATE	

ECN NO.

NAS 9-1100

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG ✓	

REASON FOR EO: DESIGN CHANGE FOR LEM-1

DESCRIPTION OF EO: ON * N/A FOR LEM-1 WAS LDW 280-25537

G. A. EO RELEASE: MPT ✓ ME

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-1 (31)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: NOT REQ'D | REWORK | SCRAP

	APPROVED BY	DATE
	J. W.	2/4/66
	H. H.	2/11/66
		2/24/66
VDI	SUPPORT (IF INDICATED)	RELIAB. GROUP
		GROUP LEADER
		STRESS GROUP
		LIAISON ENGRG
		PROJ ENGRG

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO 280

EO NO. 73

ISSUED BY A. RICHER K1153 / J. STRAKOSCH SECTION VDI GROUP NO. 280 PL

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 308
CONTROL INFO NO. LDW280A1001

ENG 22.2 REV 3-65

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS * THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-17344	B1	SEE DRAWING
-17347	B1	
-17348	C1	
-17349	B3	
-17352	A2	
-17354	B1	
-17356	B1	
-17365	B2	
-17366	C1	
-17369	A2	
-17379	C1	
-17380	B1	
-17381	B1	
-17382	A1	
-17383	A1	
-17384	B2	
-17385	C1	
-17388	D22	
-17393	B2	
-17395	C2	
-17397	B1	
-17398	B1	
-17399	C1	
-17400	B3	
-17412	B1	
-17413	C1	
-17414	B2	
-17415	B1	
-17416	B1	
-17417	B1	
-17418	B1	
-17419	B1	
LDW280-17420	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: ADDITIONAL REQUIREMENTS

DESCRIPTION OF EO: FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.

GAEC EO RELEASE: FR 10/13/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LEM		LEM-7(37) LEM-8(38) LEM-9(39)	
LEM		LEM-10(40) LEM-11(41) LEM-12(42)	
LEM		LEM-13(43) LEM-14(44) LEM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REQ'D | REWORK | SCRAP
APPROVED BY: DATE 10/5/66 | VD | SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG
DATE: 11-11-66

PP: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 302

ISSUED BY: M. GREY / J. STRAKOSCH X1153 SECTION VEHICLE DESIGN INT. GROUP NO. 280 PL 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 33.2 REV 3-65

DWG. NO. LEO280 | EO NO. 541
CONTROL INFO NO. LDW280A5132

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG [✓]

LCD19-1242 2 C

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

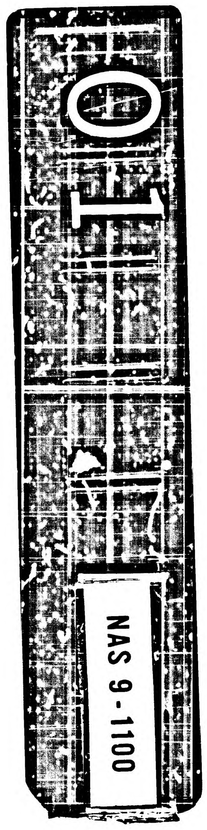
GAEC EO RELEASE: JK 9/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R (96)	

DRAWING CHANGE REQD: REVISE DWG [/] | RECORD EO
DISPOSITION OF PARTS: NOT REWORK | SCRAP
APPROVED BY / DATE: 5 YDI | SUPPORT | RELIAB GROUP | GROUP LEADER 9/5/67 | STRESS GROUP 9/4/67 | LIAISON ENGRG | PROJ ENGRG 9/30/67 9/11/67

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 541

ISSUED BY: G. BECHER/J. STAKOSCH X1153 SECTION: YDI GROUP NO. 335 PL 25



GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-17354 | EO NO. B3
CONTROL INFO NO. LDW280A-9108

IN MOD BLK OF -13 REMOVE LM-4(34) THRU LM-15(45) EFFECTIVITY

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	√ LCD 2011 & CCA 668	3

REASON FOR EO: PART INTERFERS WITH PROVISIONS FOR MODULAR EQUIP STOWAGE-DESCENT STAGE

DESCRIPTION OF EO: ON -13 REMOVED LM-4(34) THRU LM-15(45) EFFECTIVITY

GAEC EO RELEASE: JK 9/26/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4(34)	
		THRU	
		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
√			-13

PRIORITY: C

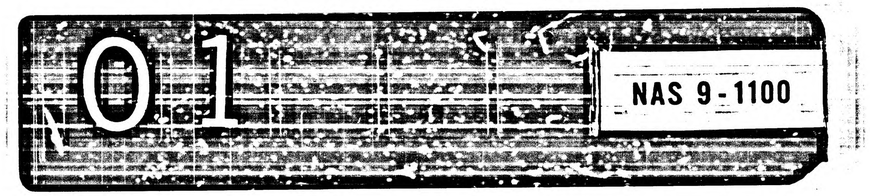
DRAWING TITLE: ANGLE - DESCENT STAGE FWD LH & RH BEAM PANEL, UPPER & LOWER

DRAWING NO.: LDW280-17354

EO NO.: B3

	APPROVED BY	DATE	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
	JRS	9/25/67	9/21/67	9/21/67	9/25	9.26.67
SUPPORT	VD1					
RELIAB. GROUP	U					

9/26 ISSUED BY Louis Berlinquette X7033 SECTION VD1 GROUP NO. 335 PL 25



GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 *
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO 280 | EO NO. 765
CONTROL INFO NO. LDW280A9977

FOR THE PARTS LISTED BELOW, REMOVE LTA-3(13) EFF.

DRAWING NO	DASH NO *	TITLE	NEXT ASSY	CHG NO.
✓ LDW280-17354	-13	SEE DWG	LDW280-23534	B4
LDW280-17695	-13	SEE DWG	LDW280-23526	C5

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCO 2011 CCA 668 | 5

REASON FOR EO: REF EFF FOR MODULAR EQUIP STOWAGE

DESCRIPTION OF EO: FOR -*, REMOVED LTA-3 EFF.

(A) GAEC EO RELEASE: JK 10/23/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3(13)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REQD | REWORK | SCRAP
APPROVED BY: [illegible]
DATE: 10/23/67
VDI | SUPPORT | RELIAB GROUP

GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
JRB 10/23/67	JTO JK 10/23/67		10/24/67

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 765

11-3
ISSUED BY S. TAMRES/J. STRAKOSCH x7033 SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

C

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-17354		EO NO. B5
CONTROL INFO NO. LDW280B1106		

IN MOD/BLK:

ON-11 ANGLE N/A LDW280-23534 SHOULD BE LDW280-54534 FOR EFF LM-4(34) THRU LM-15(45) & LTA-3 D/R (46) (1) REQ'D/MOD.

ON-12 & -14 ANGLE N/A LDW280-23537 SHOULD BE LDW280-52537 FOR EFF LM-2(32) & LM-3 (33) & SHOULD BE LDW280-54537 FOR LM-4(34) THRU LM-15(45) & LTA-3 D/R (46) (1) REQ'D/MOD.

DESCRIPTION OF EO CONT'D
ON-12 & 14 EFF LM-4 THRU LM-15 & LTA-3 D/R N/A LDW280-54537 WAS LDW280-23537.

DETAIL SPEC REQ	✓	CL II ENGRG CHG		CL I ENGRG CHG	

REASON FOR EO
TO UPDATE DRAWING (INCORRECT N/A CALLOUTS) (REF C DR LIST)

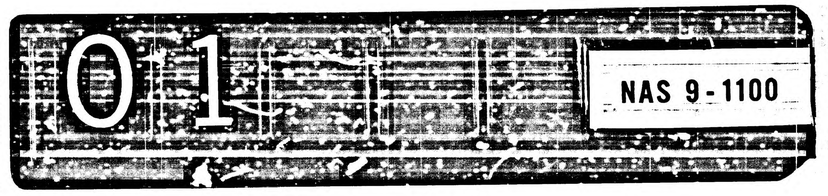
DESCRIPTION OF EO
REVISED MOD/BLK
ON-11 EFF LM-4 THRU LM-15 & LTA-3 D/R N/A LDW280-54534 WAS LDW 280-23534.
ON-12 & -14 EFF LM-2 & LM-3 N/A LDW 280-52537 WAS LDW 280-23537 (CONT'D ABOVE)

GAEC EO RELEASE: JK 1/5/68

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY								
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	REVISE DWG	RECORD EO	REWORK	SCRAP	DATE		SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
LM		LM-2(32) THRU LM-15(45)		✓		NOT REQ'D		1/4/68	V.D.I.			1-4-68	1/5/68		1/4/68
LM															
LM		LTA-3 D/R (46)													

PRIORITY: C
DRAWING TITLE: ANGLE D/S FWD LH & RH BEAM PANEL, UPPER & LOWER
DRAWING NO.: LDW280-17354
EO NO.: B5

ISSUED BY DON THOMAS / P. THORJUSEN SECTION V.D.I. x 1153 GROUP NO. 335 PL 25



GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | - | EO NO. 1347
CONTROL INFO NO. LDW280B 7395

FOR THE DWGS LISTED BELOW DELETE LM-15 (45) EFF
FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17352 ✓	A4	SEE DWG
-17354 ✓	C1	
-17356	B3	
-17362	B5	
-17365	B4	
-17366	C3	
-17369	A5	
-17375	C1	
-17379	D4	
LDW280-17381	B3	SEE DWG

* APPLICABLE DASH NOS (5)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. 10 CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM -*

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP	APPROVED BY	DATE						GAEC ED RELEASE
LM	—	LM-15(45)					✓	VDI	4/18/67			4-26-67	4/18/67	5/16/67	7/16/67

PRIORITY: C | DRAWING TITLE: SEE DWG | CONTROL NO.: LEO 280 | EO NO.: 1347

05 28 67 ISSUED BY MEVORAH / THORTJOSEN X86046 SECTION YEH DES INT GROUP NO. 335 - 35

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENG 32.1 REV 3-65 **ENGINEERING ORDER**

DWG. NO. LEO 280 | EO NO. 1636
CONTROL INFO NO. LDW 280B 8302

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40)
ADD LTA-11 (23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANITY.

	DRAWING Nº *	TITLE	CHANGE Nº
	LDW280-	SEE DWG	
×	17354		C2
-	17365		B5
-	✓ 17366		C4
-	LDW290-17369	SEE DWG	A7

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG ✓ LCD 3890 PKG 99 PG 88 & 89 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: S/S 8-21-69; J.K. 8/21/69; M.M. 8/21/69; [illegible] 8/21/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11 (23)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO

DISPOSITION OF PARTS: NOT REQ'D; REWORK; SCRAP

APPROVED BY								
DATE	7-30-69			8/21/69	N 8-21-69			
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: SEE DRAWINGS

DRAWING NO.: LEO 280

EO NO. 1636

9-26-69 ISSUED BY G. HANSMANN X87222 (ZF1) SECTION VDI GROUP NO 335 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO 280		EO NO. 1679
CONTROL INFO NO. LDW280B 8463		

FOR THE FOLLOWING DWG'S & DASH NO'S:*
REVISE N/A LDW280-60534 FOR LM 10 (40) THRU 14(44), LTA 11(23)
(WAS) N/A LDW280-54534 FOR LM 10 (40) THRU 14 (44), LTA 11(23)
& ADD LTA3DR/1 (460) N/A LDW280-60534. QUANTITY SAME AS FOR LM-10(40) THRU LM-14(44)

* DWG NO	DASH NO.	TITLE	CHG. NO.
LDW280-17354	-11	SEE DWG	C3
-17430	-17		B6
-17600	-15		B8
-17601	-19 -21		B7
-17341	-21		E4
-17278	-19		E7

DWG. NO.	DASH NO.	TITLE	CHG. NO.
LDW280-17608	-11 -19 -21 -23	SEE DWG.	C7
-17618	-11 -13		B5
-17619	-11		B6
-17705	-23		A7
-17730	-11		A6

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3994 DK64 (5)

REASON FOR EO
REDESIGN OF FWD BEAM PANEL FOR WATER, MESA, & GUX SUPPORT

DESCRIPTION OF EO
FOR * N/A LDW280-60534 WAS LDW280-54534 FOR LM 10(40) THRU LM 14(44) & LTA-11(23) & ADDED LTA 3DR/1(460) EFF.

GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM10(40) THRU 14(44)	
LM		LTA 11 (23)	
LM		LTA 3DR/1 (460)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK | SCRAP ✓

PRIORITY C

DRAWING TITLE: NOTED

DRAWING NO.: LEO 280

EO NO. 1679

	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
	JNR	9/16/69			9/16/69			9/19/69
	VD1							

CDR 09 1969
ISSUED BY Don RAGAS x8604 SECTION VD1 GROUP NO. 280 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280-17354 | EO NO. C4

CONTROL INFO NO. LDW280B8983

IN M/B FOR -12
REMOVE LM-10(40) THRU LM-14(44) & LTA-11(23)
REQ'TS N/A OF LDW280-54537

IN M/B FOR -14
N/A LDW280-54537 S/B LDW280-60537 FOR LM-10(40) THRU LM-14(44) & LTA-11(23) ADD LTA-3 DR/1(460)
REQ'TS, QTY, N/A SAME AS LM-10(40)

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG
		V

LCD 3994 PKG 65 (5)

REASON FOR EO: BATTERIES RELOCATED TO AFT BULKHEAD.

DESCRIPTION OF EO: FOR -12 REMOVED LM-10(40) THRU LM-14(44) & LTA-11(23) REQ'TS. FOR -14 N/A LDW280-60537 WAS LDW280-54537 FOR LM-10(40) THRU LM-14(44) & LTA-11(23) & ADDED LTA-3 DR/1 (460) EFF.

GAEC TWX EO RELEASE: JR 10-6-65; JK 10/7/65

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10(40) THRU	
		LM-14(44)	LTA-11(23)
		LTA-3 DR/1	(460)

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	-12 SCRAP
✓			

PRIORITY: C

DRAWING TITLE: STIFFENER DIS FWD LH&RH BEAM PANEL ~UPR & LWR

DRAWING NO.: LDW280-17354

	APPROVED BY	DATE	SUPPORT	RELIAB. GROUP
		10/6/65	VDI	

GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG	EO NO.
10-2-65	10/3/65		10/6/65	C4

CDR 100369
ISSUED BY P. LANDRY / G HANSMANN SECTION V.D.I GROUP NO. 335 PL 25

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NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LDW280-17354 | EO NO. C5

CONTROL INFO NO. LM-2-6052

THIS IS A REVISION OF EO-C4

IN M/B FOR -12
REMOVE LM-10(40) THRU LM-14(44) & LTA-11(23) REQ'TS N/A OF LDW280-54537
SHOULD BE
IN M/B FOR -14
REMOVE LM-10(40) THRU LM-14(44) & LTA-11(23) REQ'TS N/A OF LDW280-54537

IN M/B FOR -14
N/A LDW280-54537 S/B LDW280-60537 FOR LM-10(40) THRU LM-14(44) & LTA-11(23). ADD LTA-3DR/1(460) REQ'TS N/A SAME AS LM-10(40).
SHOULD BE
IN M/B FOR -12
N/A LDW280-54537 S/B LDW280-60537 FOR LM-10(40) THRU LM-14(44) & LTA-11(23). ADD LTA-3DR/1(460) REQ'TS N/A SAME AS LM-10(40).

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓	LCD 3994

REASON FOR EO: INCORRECT DETAIL PART HAD REQUIREMENT CANCELLED FOR RELOCATION OF BATTERIES

DESCRIPTION OF EO: REFERENCE EO-C4 FOR -14, REMOVED LM-10(40) THRU LM-14(44), LTA-11(23) & LTA-3DR/1 FOR-12, REINSTATED LM-10(40) THRU LM-14(44) & LTA-11(23) REQ'TS FOR N/A LDW280-60537 & ADDED LTA-3DR/1(460).

REQ'MTS. (E) | GAEC EO RELEASE: 2/6 3-5-70

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
LM		LM-10(40) THRU LM-14(44) LTA-11(23) LTA-3DR/1(460)		✓		✓	-14

APPROVED BY						
DATE	3-4-70					
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG
				3/4/70	4/25/70	4/25/70

KC	KC	RBT		
3-4-70	3-4-70	3-4-70	3/4/70	
PROJ ENGRG	GOVT			

PRIORITY: C

DRAWING TITLE: STIFFENER - D/S - FWD L.H. & R.H. BEAM PANEL - UPPER & LOWER

DRAWING NO.: LDW280-17354 | EO NO.: C5

ISSUED BY LIAISON J. MALONEY 2/25/70 x3604 SECTION V.D.I.

GROUP NO. 335 PL 25

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	
LEM	LDW280-25536	LEM-1(31)	1
LEM	LDW280-25536	LTA-8(18)	1
LEM	LDW280-25536	LTA-5(15	1
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17355-12		GAEC SCH NO. 51-4	
LEM	LDW280-25539	LEM-1(31)	1 EA
LEM	LDW280-28539	LTA-8(18)	1 EA
LEM	LDW280-25539	LTA-5(15)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17355-11,-13,-15 & -17		GAEC SCH NO. 51-4	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1	1.10	2	3					
REV	A	A							
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	
LAST DASH NO. USED	-17

GRUMMAN REL INFO

PRIM NO.	1001	
207	PP10	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO.	NAS 9-1100	LINE ITEM	1
DOCUMENTATION TYPE	II		
DRAWN BY	J. COBB 10-22-65	RELIABILITY	
LAYOUT BY	BARNES 11/4/65		
CHECKED BY	10-26-65		
GR LEADER			
VEH DES INT			
STRUCTURE		11/12	PROJ ENGR
STRUCTURE	Hilderman 11-12	REL GROUP	
WEIGHTS		11-13	

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER
DESCENT STAGE ~ LANDING GEAR ACTUATOR SUPPORT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17355	A

SCALE NONE SHEET 1 OF 4

ENG 77.1 9-64

SWIP

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10						LE0280 EO 89 (R)	SH 1 OF 4 WAS SH 1 OF 3 ADDED SH 1.10 FOR ALL DASH NUMBER THAT NEXT ASSEMBLED ON LDW280-25539 CHANGED N/A TO LDW280-28539 EFFECTIVITY LTA-8(18) ONLY, QTY REMAIN SAME	LTA-8(18)	NOT REQD	48	E. HERCZEG 6-11-66		

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS
	A					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17355	A

SCALE NONE SHEET 1.10

ENG 77-16 3-66

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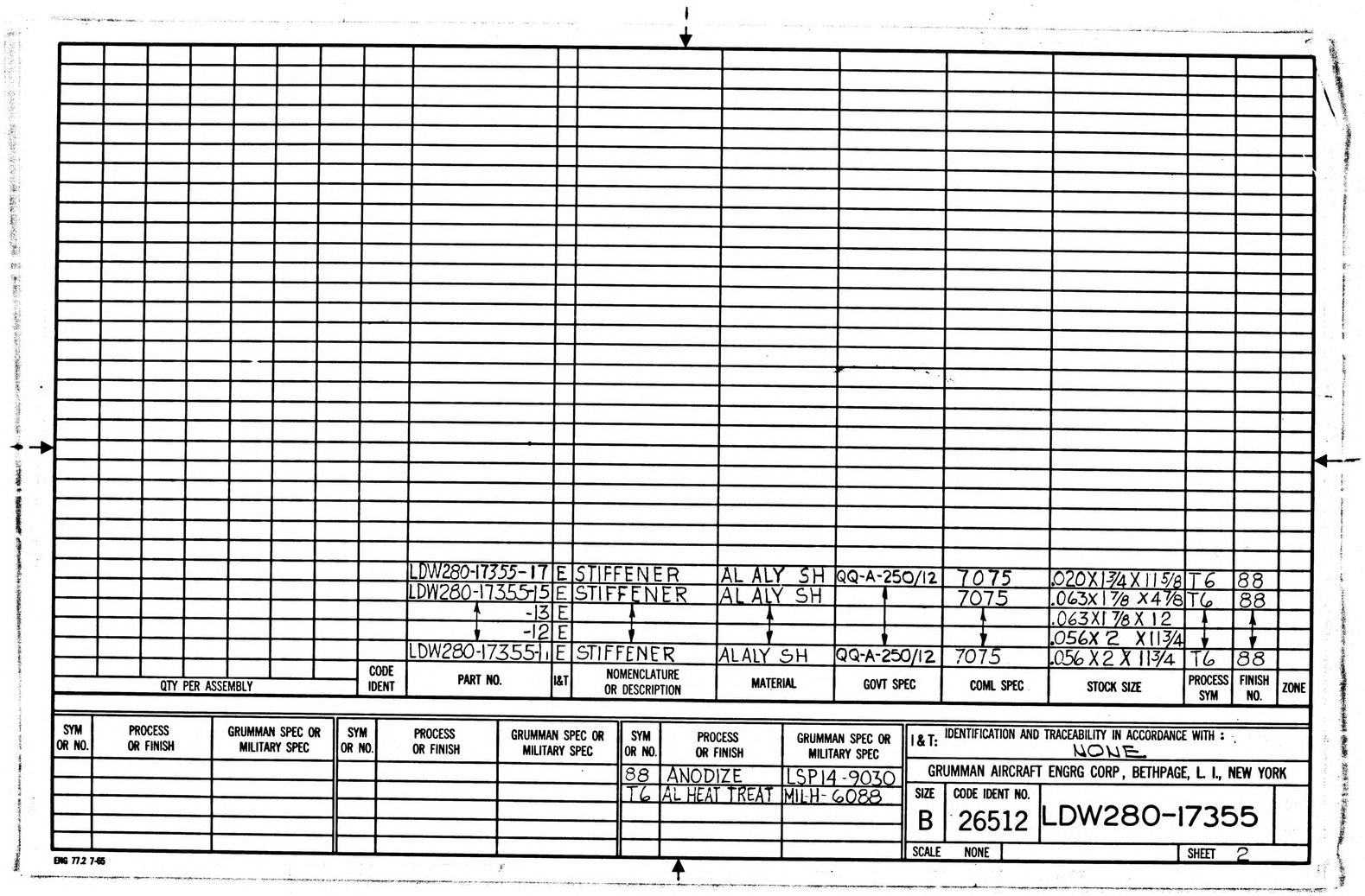
NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17355-17	E	STIFFENER	AL ALY SH	QQ-A-250/12	7075	.020X1 3/4X11 5/8	T6	88	
		LDW280-17355-15	E	STIFFENER	AL ALY SH	"	7075	.063X1 7/8 X4 7/8	T6	88	
		-13	E	"	"	"	"	.063X1 7/8 X 12	"	"	
		-12	E	"	"	"	"	.056X 2 X11 3/4	"	"	
		LDW280-17355-1	E	STIFFENER	AL ALY SH	QQ-A-250/12	7075	.056 X 2 X 11 3/4	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP14-9030
T6	AL HEAT TREAT	MILH-6088

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17355

SCALE NONE SHEET 2

ENG 77.2 7-65

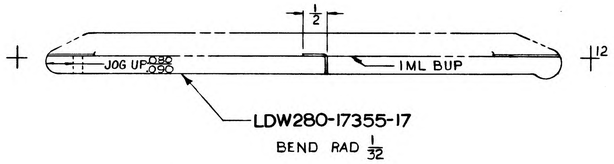
01

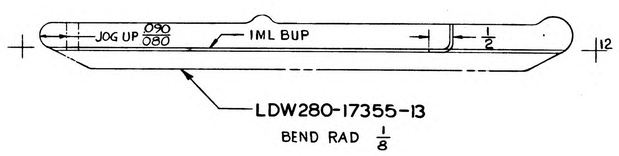
NAS 9-1100

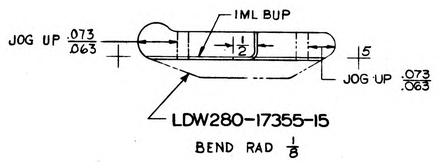
LDW280-17355

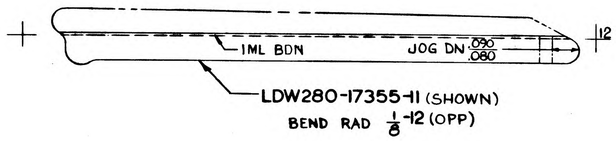
NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.

TR EG









MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE EDGE DISTANCE	
SYMBOL X DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, MAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

	GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK		
LEM	SIZE D	CODE IDENT NO. 26512	LDW280-17355
MODEL OR END ITEM	SCALE FULL		SHEET 3

2 FOR PHOTO REPRODUCTION 1

K-2

LDW280-17355 B

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.2 REV 3-66

DWG. NO. LEO 280 | EO NO. 89
CONTROL INFO NO. LDW280-5898

ON THE FOLLOWING DRAWINGS FOR ALL DASH NUMBERS THAT NEXT ASSEMBLE ON LDW280-25539 CHANGE N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QUANTITIES REMAIN SAME

DWG No	CHANGE No	TITLE
LDW280-17306	A1	SEE DRAWINGS
LDW280-17278	B2	
LDW280-17277	B2	
LDW280-17221	A2	
LDW280-17219	A2	
LDW280-17175	A2	
LDW280-17174	A1	
LDW280-17169	A1	
LDW280-17167	A4	
LDW280-17139	B3	
LDW280-17408	A1	
LDW280-17407	A2	
LDW280-17400	A2	
LDW280-17356	A3	
LDW280-17355	A1	
LDW280-17348	A4	
LDW280-17344	A3	
LDW280-17341	B2	
LDW280-17329	A2	
LDW280-17328	A1	
LDW280M17342	A1	
LDW280M17247	B1	
LDW280M17139	B1	
LDW280M17115	B1	
LDW280M17110	B4	
LDW280-17448	A1	
LDW280-17450	A2	
LDW280-17447	A1	
LDW280-17445	A1	
LDW280-17439	A1	
LDW280-17410	A3	SEE DRAWINGS

NAS 9-1100

2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: CREATE N/A TO ACCOMMODATE LINE RUN

DESCRIPTION OF EO: FOR ALL DASH NUMBERS THAT NEXT ASSEMBLED ON LDW280-25539 CHANGED N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QTY REMAIN SAME

GAEC EO RELEASE: 4/16

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: NOT REWORK | REQD SCRAP

APPROVED BY								
DATE	4/13/66	4/4			4/12/66	4-4	4/13/66	
	VDI		RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	OMPP

PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO 280
EO NO.: 89

ISSUED BY A. MEVORAH/J. STRAKOSCH SECTION VDI GROUP NO. 335 PL. 35

LEM	LDW280-23539	LEM-6(36)	1
		LEM-5(35)	1
		LEM-4(34)	1
		LEM-3(33)	1
		LEM-2(32)	1
	LDW280-23539	LTA-3(13)	1
LEM	LDW280-25539	LEM-1(31)	1
LEM	LDW280-28539	LTA-8(18)	1
LEM	LDW280-25539	LTA-5(15)	1

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17356-17		GAEC SCH NO.	
PART NO. LDW 280-17356-13		GAEC SCH NO. 51-4	
PART NO. LDW280-17356-15		GAEC SCH NO. 51-4	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00	1.10	2.00	3.00						
REV	A	A	A	A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	
LAST DASH NO. USED	-17

GRUMMAN REL^E INFO

PRIM NO.			
207	(D001) PP10		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 | LINE ITEM #1 | DOCUMENTATION TYPE II

DRAWN BY	L. BRIDA 11-6-65	RELIABILITY	
LAYOUT BY	G. BARNES 11/8		
CHECKED BY	EG 11-10-65		
GR LEADER			
VEH DES INT	11/17		
STRUCTURES	11/17/65	PROJ ENGR	11/20
STRUCTURES	11-17	REL GROUP	11/22
WEIGHTS	11-19		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER
DESCENT STAGE-VERTICAL AFT
LH BEAM PANEL

SIZE	CODE IDENT NO.	
B	26512	LDW28017356 A

SCALE NONE | SHEET 1.00 OF 4

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1, 1.10 2, 3						EO A1	SH 1 OF 4 WAS SH 1 OF 3, ADDED SH 1.10 REMOVED -11, ADDED -15	LTA-3;5-8. LEM-1;2;3;4;5;6		-11	E. HERCZEG, 7-12-66 RS		
	2	1, 1.10 2, 3						EO A2	REVISED EFF & N/A FOR -13 & -15; -13 WAS LTA-5(15), LTA-8(18), LEM-1(31). ON LDW280-25539; -15 WAS LTA-5(15), LTA-8(18) & LEM-1(31) ON LDW280-25539 & LTA-3(13), LEM-2(32) THRU LEM-6(36) ON LDW280-23539 ADDED -17.	LTA-8 LEM-1 LTA-5		-15			
	3	1, 1.10						LEO280-89	FOR ALL DASH NUMBERS THAT NEXT ASSEMBLED ON LDW280-25539 CHANGED N/A TO LDW280-28539 EFFECTIVITY LTA-8(18), ONLY, QTY REMAIN SAME	LTA-8	NOT REQD				

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
	A						

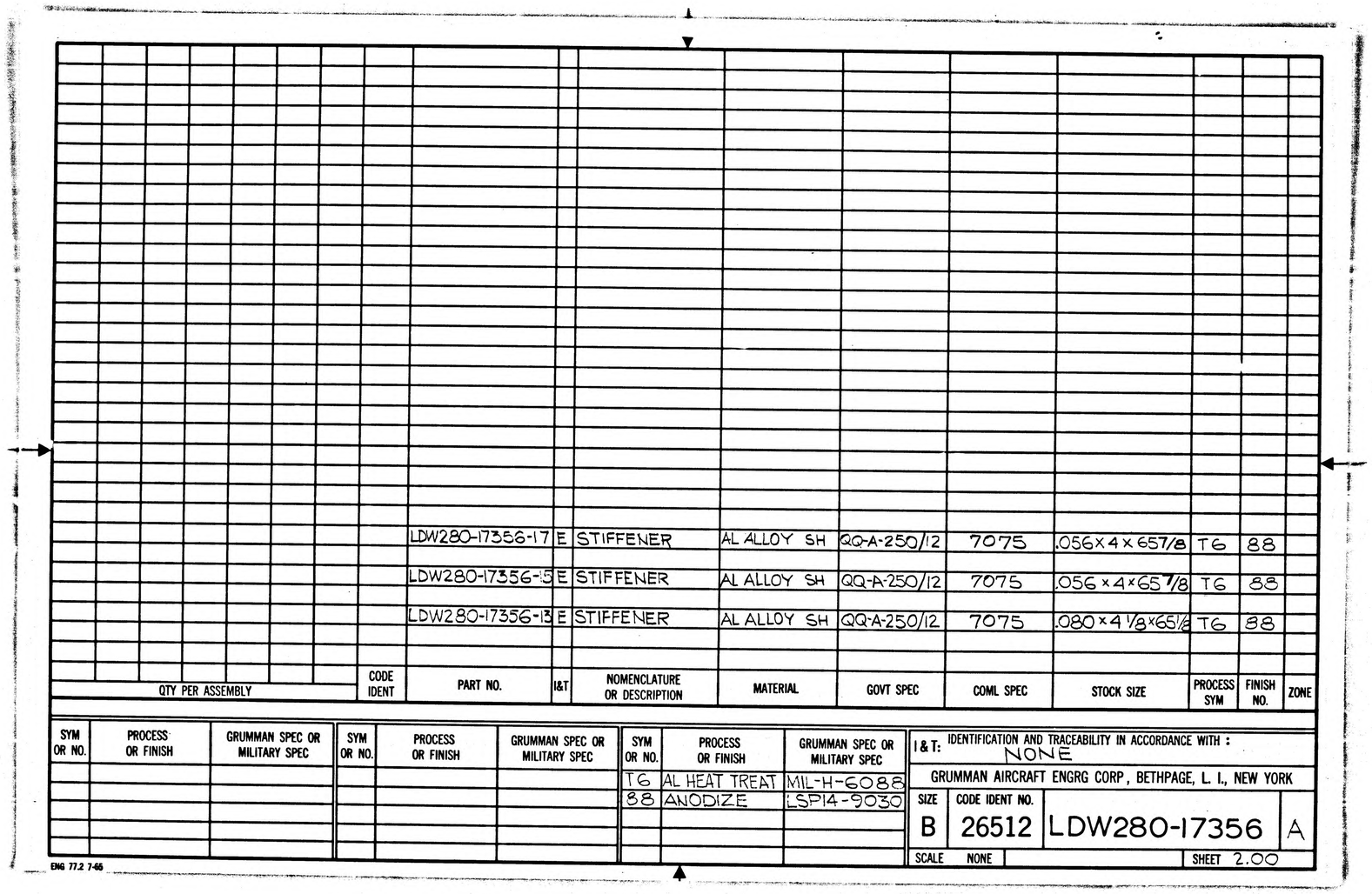
GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17356	A

SCALE NONE SHEET 1.1O

ENG 77.16 3-66

01 NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17356-17	E	STIFFENER	AL ALLOY SH	QQ-A-250/12	7075	.056 x 4 x 65 7/8	T6	88	
		LDW280-17356-15	E	STIFFENER	AL ALLOY SH	QQ-A-250/12	7075	.056 x 4 x 65 7/8	T6	88	
		LDW280-17356-13	E	STIFFENER	AL ALLOY SH	QQ-A-250/12	7075	.080 x 4 1/8 x 65 1/8	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

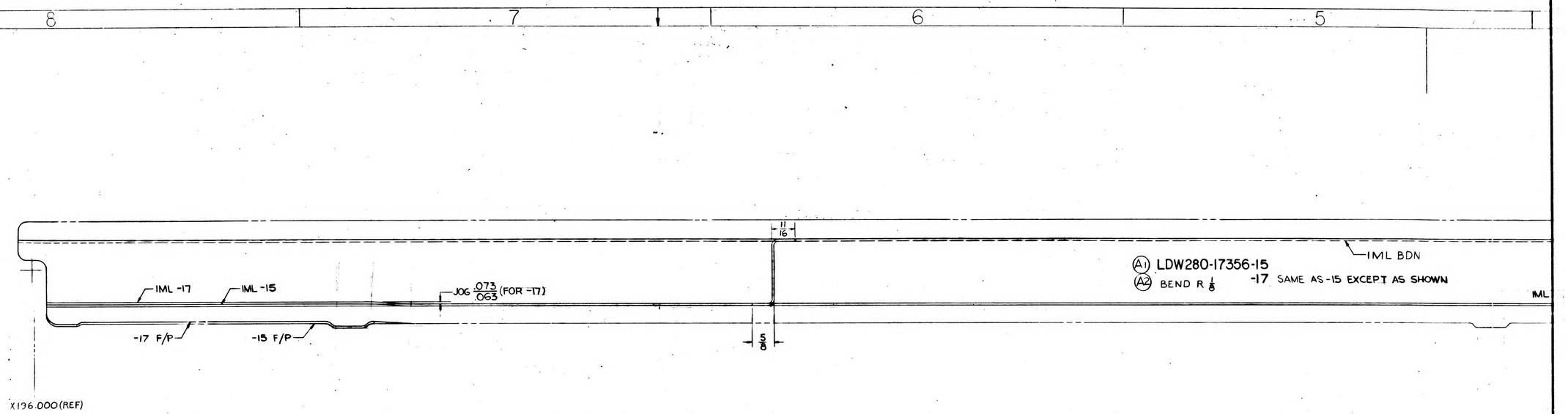
SIZE	CODE IDENT NO.		
B	26512	LDW280-17356	A

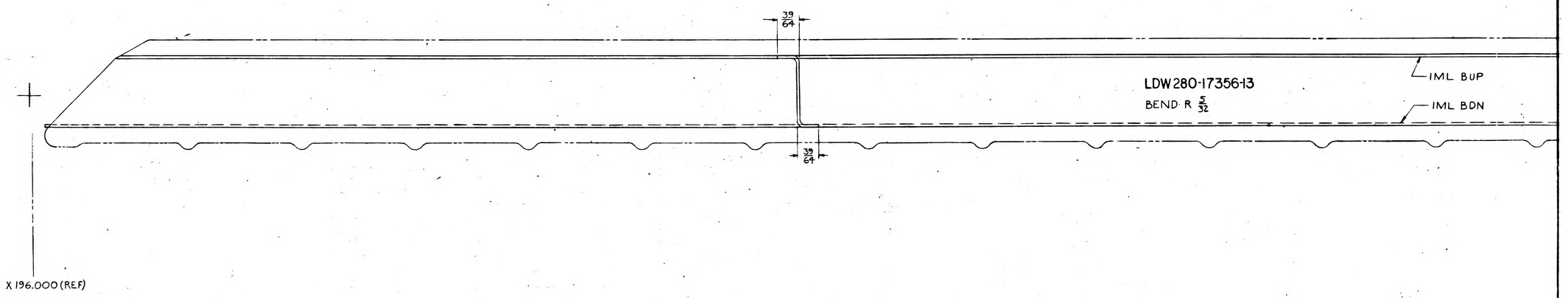
SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100





01/03 NAS 9-1100

CODE IDENT NO 26512
LDW280-17356 SH 3

80
25

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.

IML BDN

ME. AS-15 EXCEPT AS SHOWN

IML BUP

65

X131.140(REF)

IML BUP

IML BDN

65

X131.140 (REF)

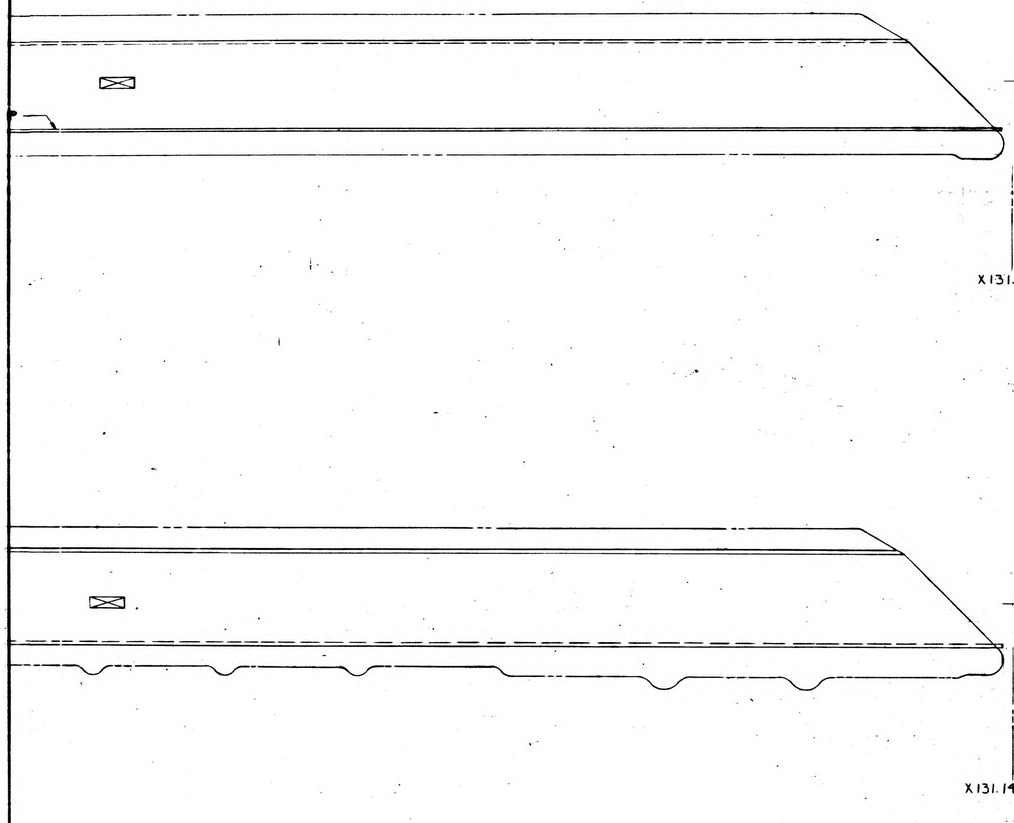
02/03 NAS 9-1100

CODE IDENT NO. 26512
LDW 280-17356 SH 3

CODE IDENT NO. 26512
LDW 280-17356 SH 3

LEM
MODEL ORSNDITYM
GRUMMAN AIRCRAFT ENGRG CORP
SIZE H | CODE IDENT NO. 26512 | LDW28
SCALE FULL

FOR PHOTO R



NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.

80
25

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED ⌀ MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
250 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED 1D	
SYMBOL X DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

DWG SIZE D6 594
PRINTING INFO ONLY
FULL SIZE SHEET LIMITS ON 96) =
½ SIZE SHEET AREA (½ OF FULL) =
20 SQ. FT.
5" SQ. FT.
PRINT TRIM LINE

LDW280-17356 A
LDW280-17356 A

F03703 NAS 9-1100

	L.E.M. MODEL OR END ITEM
	© GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK
SIZE H	CODE IDENT NO. 26512
	LDW280-17356 REV A
SCALE FULL	SHEET 3.00

CODE IDENT NO. 26512
LDW 280-17356 SH 3

FOR PHOTO REPRODUCTION

K2

DRG 754 644

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.2 REV 3-66

ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 89

CONTROL INFO NO. LDW280-5898

ON THE FOLLOWING DRAWINGS FOR ALL DASH NUMBERS THAT NEXT ASSEMBLE ON LDW280-25539 CHANGE N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QUANTITIES REMAIN SAME

DWG No	CHANGE No	TITLE
LDW280-17306	A1	SEE DRAWINGS
LDW280-17278	B2	
LDW280-17277	B2	
LDW280-17221	A2	
LDW280-17219	A2	
LDW280-17175	A2	
LDW280-17174	A1	
LDW280-17169	A1	
LDW280-17167	A4	
LDW280-17139	B3	
LDW280-17408	A1	
LDW280-17407	A2	
LDW280-17400	A2	
LDW280-17356	A3	
LDW280-17355	A1	
LDW280-17348	A4	
LDW280-17344	A3	
LDW280-17341	B2	
LDW280-17329	A2	
LDW280-17328	A1	
LDW280M17342	A1	
LDW280M17247	B1	
LDW280M17139	B1	
LDW280M17115	B1	
LDW280M17110	B4	
LDW280-17448	A1	
LDW280-17450	A2	
LDW280-17447	A1	
LDW280-17445	A1	
LDW280-17439	A1	
LDW280-17410	A3	SEE DRAWINGS

NAS 9-1100

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	

REASON FOR EO: CREATE N/A TO ACCOMMODATE LINE RUN

DESCRIPTION OF EO: FOR ALL DASH NUMBERS THAT NEXT ASSEMBLED ON LDW280-25539 CHANGED N/A TO LDW280-28539 EFF LTA-8(18) ONLY, QTY REMAIN SAME

② GAEC EO RELEASE 4/7/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LTA-8(18)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: NOT REWORK	REQD SCRAP
✓			

APPROVED BY								
	W.B.M.			Mgr ESD 4/7/66		Dillenbeck	Bell	
DATE 4/6	4/6			4/7/66		4-6	4-13-66	
VDI		RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO 280

EO NO. 89

ISSUED BY A. MEVORAH/J. STRAKOSCH SECTION VDI GROUP NO. 335 PL 35

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 302
CONTROL INFO NO. LDW280A1001

ENG 22.2 REV 3-66

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-17344	B1	SEE DRAWING
-17347	B1	
-17348	C1	
-17349	B3	
-17352	A2	
-17354	B1	
-17356	B1	
-17365	B2	
-17366	C1	
-17369	A2	
-17379	C1	
-17380	B1	
-17381	B1	
-17382	A1	
-17383	A1	
-17384	B2	
-17385	C1	
-17388	D22	
-17393	B2	
-17395	C2	
-17397	B1	
-17398	B1	
-17399	C1	
-17400	B3	
-17412	B1	
-17413	C1	
-17414	B2	
-17415	B1	
-17416	B1	
-17417	B1	
-17418	B1	
-17419	B1	
LDW280-17420	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: ADDITIONAL REQUIREMENTS

DESCRIPTION OF EO: FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.

GAEC EO RELEASE: FR 10/13/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-7(37) LEM-8(38) LEM-9(39)	
LEM		LEM-10(40) LEM-11(41) LEM-12(42)	
LEM		LEM-13(43) LEM-14(44) LEM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: NOT REQ'D | REWORK | SCRAP

APPROVED BY: DATE 10/5/66 | VD-1 | SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGR | PROJ ENGR

11-11-66

PR: C | DRAWING TITLE: NOTED | DRAWING NO.: LEO280 | EO NO.: 302

ISSUED BY: M. GREY / J. STRALOSCH X1153 | SECTION: VEHICLE DESIGN INT. | GROUP NO.: 280 | PL: 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A6132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ	CL II ENGRG CHG	/	CL I ENGRG CHG		LCD19-1242	2

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

(B) GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R	(46)

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	APPROVED BY	DATE		SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	
/		NOT REQD		[illegible]	3/28/67				5/5/67	4/4/67		3 30-67	4/4/67
				5	YDI								

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 541

ISSUED BY G. BECKER/J. STRAKOSCH X1163 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | ED NO. 1347
CONTROL INFO NO. LDW280B 7395

FOR THE DWGS LISTED BELOW DELETE LM-15 (45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17352 ✓	A4	SEE DWG
-17354 ✓	C1	
-17356 ✓	B3	
-17362	B5	
-17365	B4	
-17366	C3	
-17369	A5	
-17375 ✓	C1	
-17379	D4	
LDW280-17381	B3	SEE DWG

* APPLICABLE DASH NOS (5)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. 10 CCA 1821

REASON FOR ED: LM-15(45) NO LONGER REQD

DESCRIPTION OF ED: DELETED LM-15(45) EFF FROM —*

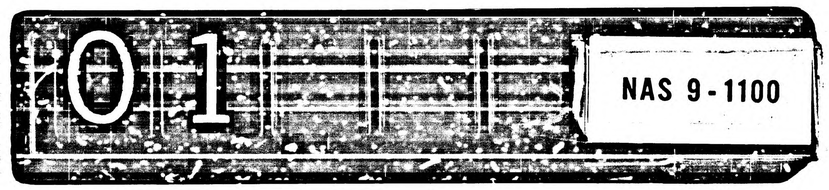
ED RELEASE: 4/16/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: SPEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM	—	LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD ED
DISPOSITION OF PARTS: REWORK | SCRAP ✓
APPROVED BY: DATE 4/16/69 (VDS) | SUPPORT | RELIAB. GROUP
GROUP LEADER 4-2-69 | STRESS GROUP 4/18/69 | LIAISON ENGRG | PROJ ENGRG 4/16/69 4/16/69

PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO 280
ED NO.: 1347

05 28 69 ISSUED BY MEVORAH / THORJUSEN X86046 SECTION VEH DES INT GROUP NO. 335-25



GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.1 REV 3-65

ENGR. NO. LEO 280 | EO NO. 1541
CONTROL INFO NO. LDW 280B 8079

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40) [redacted]
ADD LTA-11 ([redacted]23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING NO *	TITLE	CHANGE NO
LDW280-17337	SEE DWG	D2
341		E2
343		C4
344		B4
347		B4
348		C5
349		C2
356		B1
362		B6
LDW280-17327	SEE DWG	B5

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG 99 Pg 3-4 & 96 (5)

REASON FOR EO
NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO
ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: JA 8-8-69; VK 8/4/9; [illegible] Bauman 8-9-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11([redacted]) (23)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: NOT REQ'D; REWORK; SCRAP

APPROVED BY							
DATE	7-29-69				8-2-69		
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG

PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO.: LEO 280
EO NO.: 1541

8-12-69 ISSUED BY G. HANSMANN X87222 (MH) SECTION VDI GROUP NO 335 PL 25

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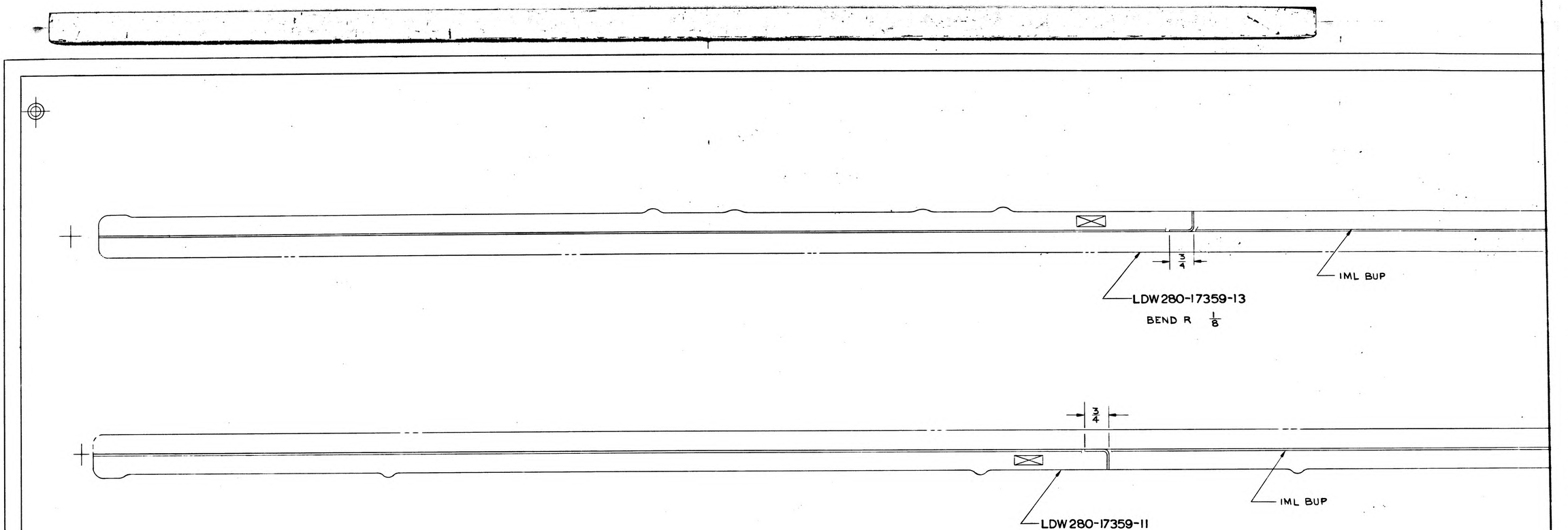
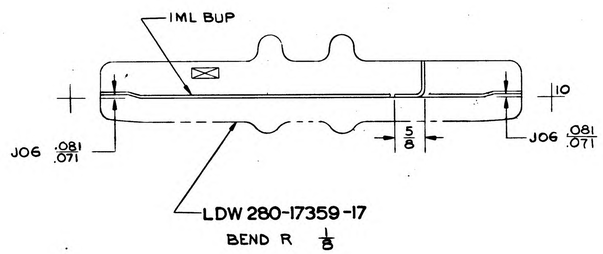
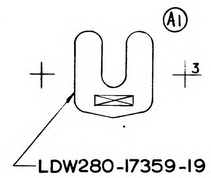
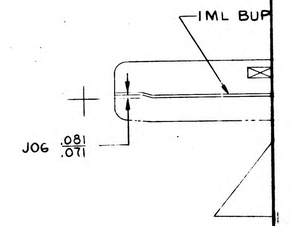
NAS 9-1100



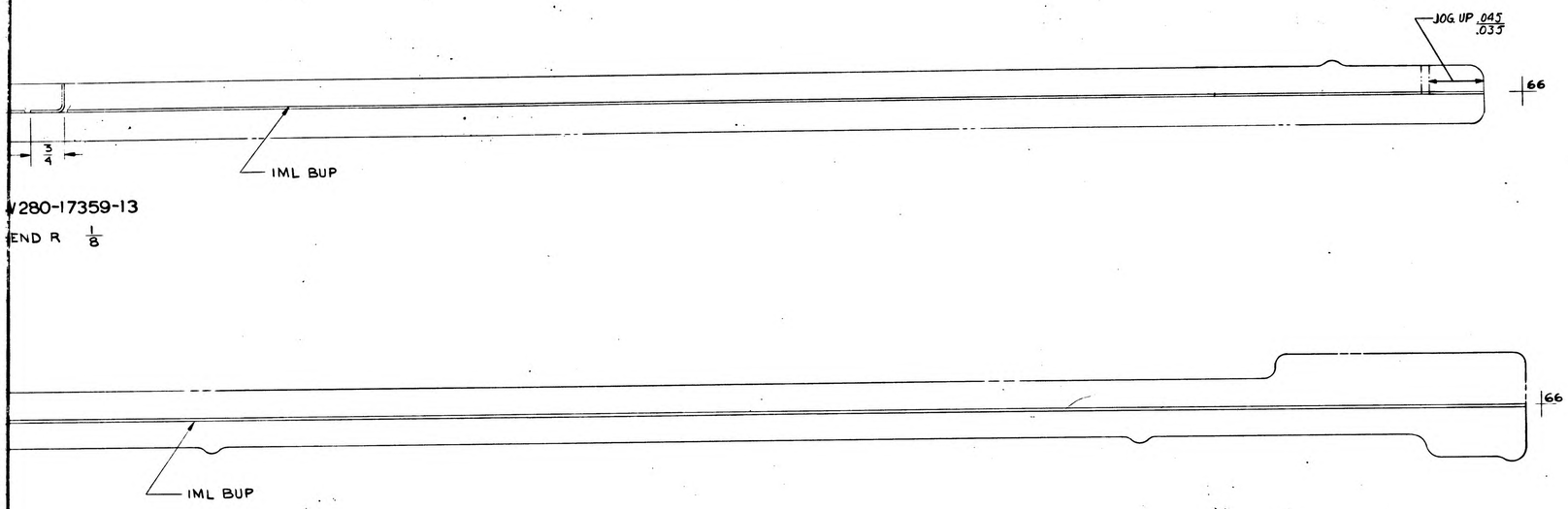


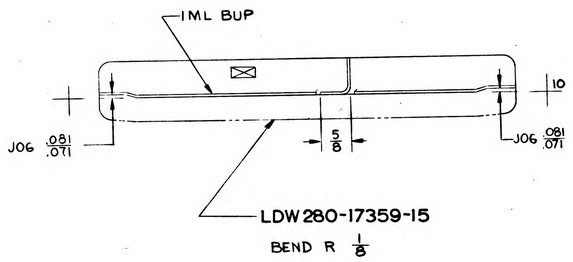




01/02 NAS 9-1100

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.





MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2.3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES ON SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL X DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	

DWG SIZE 28.5 x 2

PRINTING INFO ONLY
FULL SIZE SHEET AREA (ON 64.) = 17.5 SQ. FT.
½ SIZE SHEET AREA (¼ OF FULL) = 4.4 SQ. FT.

PRINT TRIM LINE

LDW280-17359 A

LDW280-17359 A

02/02 NAS 9-1100

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I. NEW YORK			
	SIZE	CODE IDENT NO.		
LEM	H	26512	LDW280-17359	A
MODEL OR END ITEM	SCALE FULL		SHEET 3.00	

FOR PHOTO REPRODUCTION

K2

ENG 734 644

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17359-19	E	DOUBLER	AL ALLOY SH.	QQ-A-250/12	7075-T6	.063 X 2 3/8 X 2 1/2	NONE	88	
		-17		ANGLE			7075	.063 X 3 X 9 1/2	T6		
		-15						.050 X 2 1/8 X 9 1/2			
		-13						.056 X 2 1/4 X 65			
		LDW280-17359-11	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.071 X 3 1/8 X 66	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-26100

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

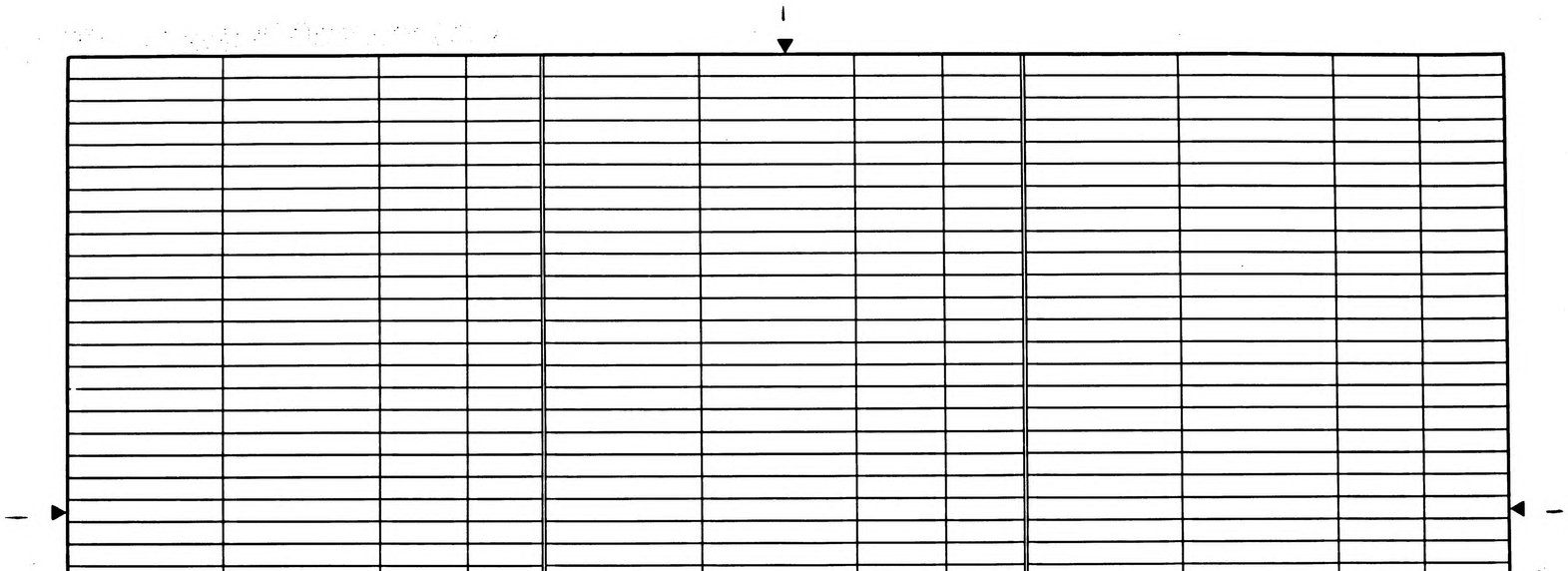
SIZE	CODE IDENT NO.	
B	26512	LDW280-17359

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100



				LEM	LDW-280-28570	LEM-1(31)	2 EA	LEM	LDW280-28570	LEM-1(31)	1 EA
				LEM	LDW-280-28570	LTA-8(18)	2 EA	LEM	LDW280-28570	LTA-8(18)	1 EA
				LEM	LDW-280-25570	LTA-5(15)	2 EA	LEM	LDW280-25570	LTA-5(15)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.		PART NO. LDW280-17360-13,-19&-20		GAEC SCH NO.		PART NO. LDW280-17360-11,-15, -16,-17 & -18		GAEC SCH NO.	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES ±1/32 ±.020 ±1/2°	CONTRACT NO. NAS9-1100		LINE ITEM # 1	DOCUMENTATION TYPE II
SHEET	1	1.10	2	3						ORIG DWG AUTH	DRAWN BY	HERB SCHWETER 11/16/65	RELIABILITY	GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK
REV	A	A		A						DETAIL SPEC REQUIREMENT	LAYOUT BY	J.J. ROGERS 11/18		CLIP
SHEET										CLASS II ENGRG CHANGE	CHECKED BY	L.M. 11-18-65		DESCENT STAGE~E.R.A. SUPPORT LATERAL~LWR INTERCOSTAL
REV										CLASS I ENGRG CHANGE	GR LEADER	[signature] 11/18/65		
SHEET											VEH DES INT	[signature] 11/19/65		
REV											STRUCTURES	[signature] 11/16/65	PROJ ENGR	[signature] 1/14
LAST SECT LTR USED		GRUMMAN REL INFO									STRUCTURES	[signature] 11/16/65	REL GROUP	[signature] 1/17/66
LAST DASH NO. USED	-20	PRIM NO.	CE(001)								WEIGHTS	[signature] 11/19/65		SIZE B CODE IDENT NO. 26512 LDW280-17360 A
		207	PP12											SCALE NONE SHEET 1 OF 4

ENG 77.1 9-64

SWP

01 NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
PART NO.			

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LEM	LDW-280-28570	LEM-1(31)	2 EA
LEM	LDW-280-28570	LTA-8(18)	2 EA
LEM	LDW-280-25570	LTA-5(15)	2 EA
PART NO. LDW280-17360-13,-19 & -20			

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-28570	LEM-1(31)	1 EA
LEM	LDW280-28570	LTA-8(18)	1 EA
LEM	LDW280-25570	LTA-5(15)	1 EA
PART NO. LDW280-17360-11,-15,-16,-17 & -18			

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1	1.10	2	3				
REV	A	A		A				
SHEET								
REV								
SHEET								
REV								

LAST SECT LTR USED		GRUMMAN REL INFO A	
LAST DASH NO. USED	-20	PRIM NO. 207	CE(001) PP12

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED FRACTIONS - DECIMALS – ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100 | LINE ITEM # 1 | DOCUMENTATION TYPE II

DRAWN BY	HERB. SCHWETER 11/16/65	RELIABILITY	——
LAYOUT BY	J.J. ROGERS		
CHECKED BY	L.M. 11-18-65		
GR LEADER	[signature]		
VEH DES INT	[signature]		
STRUCTURES	[signature] 1/11/66	PROJ ENGR	[signature] 1/14
STRUCTURES	[signature] 1/10/66	REL GROUP	[signature] 1/17/66
WEIGHTS	[signature]		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CLIP
DESCENT STAGE ~ E.R.A. SUPPORT
LATERAL ~ LWR INTERCOSTAL

SIZE	CODE IDENT NO.		
B	26512	LDW280-17360	A

SCALE NONE | SHEET 1 OF 4

ENG 77.1 9-64

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1,1.10f3						EO A1	ON-13, DRILL 13/16 (.811-.822)-2 HOLES WAS DRILL 47/64 (.733-.742)-2 HOLES. SH 1 OF 4 WAS 1 OF 3 ADDED SH 1.10	LTA-59-8 LEM-1	✓		8-17-66		X

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS
	A					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17360	A

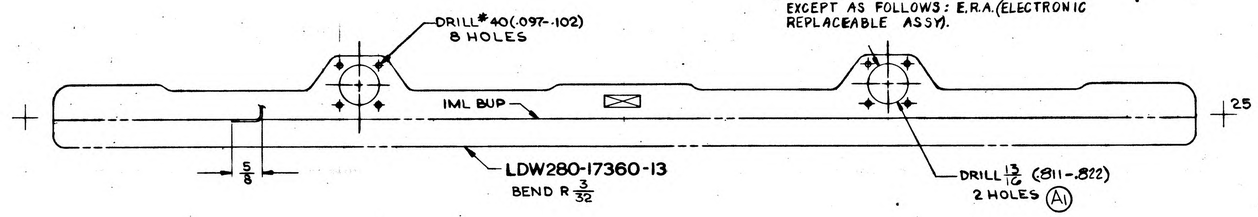
SCALE NONE SHEET 1.10

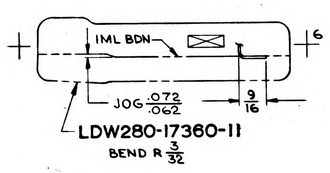
ENG 77.16 3-66

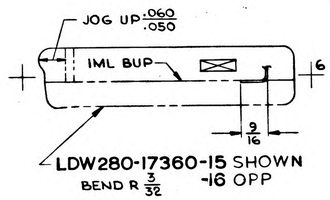
01

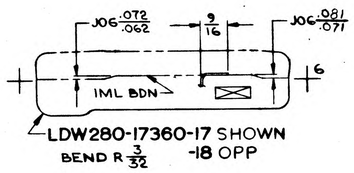
NAS 9-1100

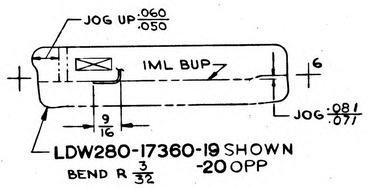
NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. ALL ABBREVIATIONS ARE PER MIL-STD 12 EXCEPT AS FOLLOWS: E.R.A. (ELECTRONIC REPLACEABLE ASSY).











MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠	V
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .008; .063R TO .250R ± .015; OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2.3 MIN. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED ⌀ MUST BE CONCENTRIC WITHIN .005 FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL X DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, MAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	V

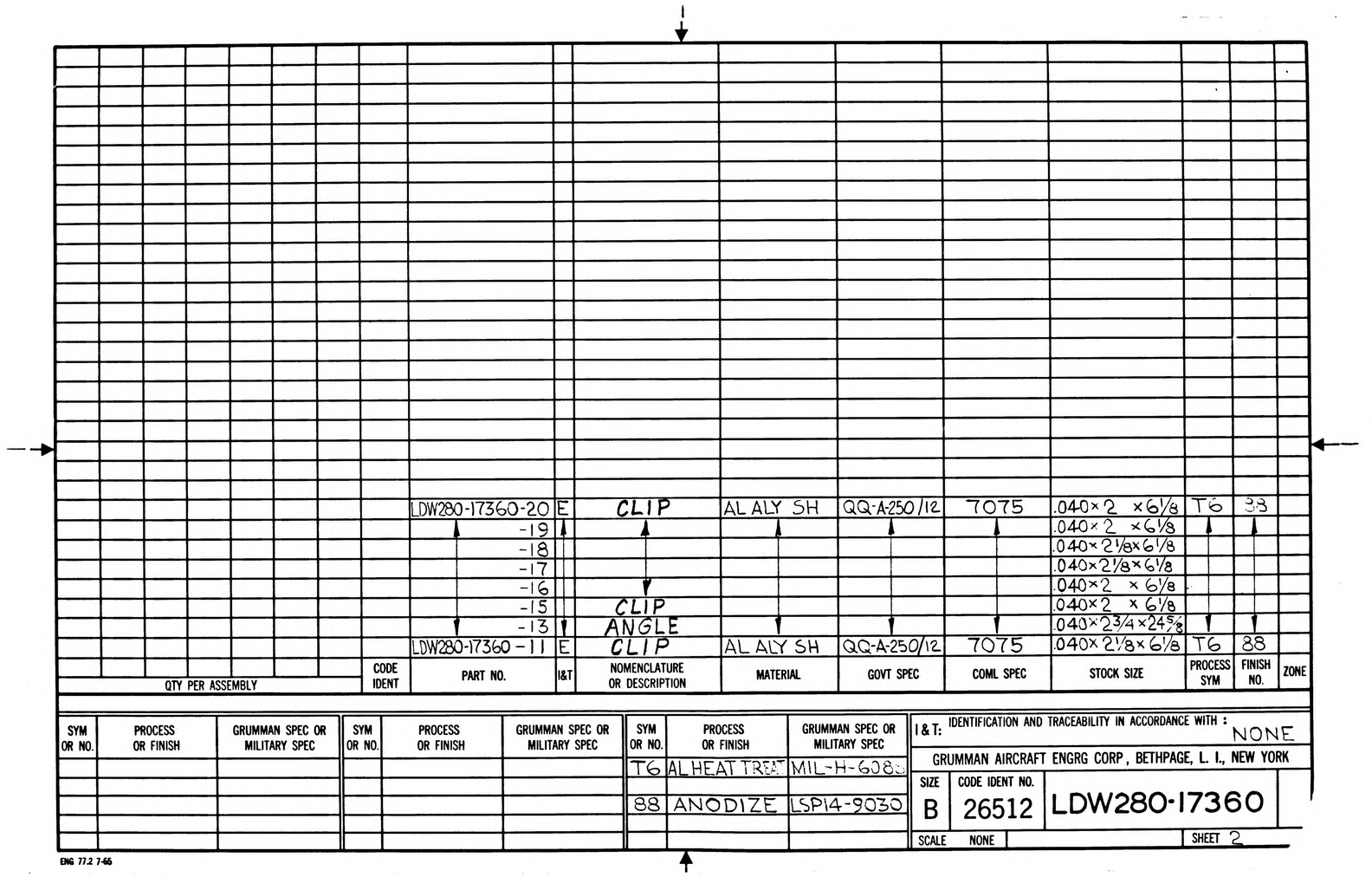
	GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK		
LEM	SIZE D	CODE IDENT NO. 26512	LDW280-17360 A
MODEL OR END ITEM	SCALE FULL		SHEET 3

FOR PHOTO REPRODUCTION

LDW280-17360-A

0-1

NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17360-20	E	CLIP	AL ALY SH	QQ-A-250/12	7075	.040×2 ×6⅛	T6	88	
		-19						.040×2 ×6⅛			
		-18						.040×2⅛×6⅛			
		-17						.040×2⅛×6⅛			
		-16						.040×2 ×6⅛			
		-15		CLIP				.040×2 ×6⅛			
		-13		ANGLE				.040×2¾×24⅝			
		LDW280-17360-11	E	CLIP	AL ALY SH	QQ-A-250/12	7075	.040×2⅛×6⅛	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC	SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
						T6	AL HEAT TREAT	MIL-H-6088
						88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17360

SCALE NONE SHEET 2

ENG 77.2 7-65

01

NAS 9-1100

LEM	LDW280-28570	LEM-1 (31)	5 EA	LEM	LDW280-28570	LEM-1 (31)	3	LEM	LDW280-28570	LEM-1 (31)	1 EA
LEM	LDW280-28570	LTA-8 (18)	5 EA	LEM	LDW280-28570	LTA-8 (18)	3	LEM	LDW280-28570	LTA-8 (18)	1 EA
LEM	LDW280-25570	LTA-5 (15)	5 EA	LEM	LDW280-25570	LTA-5 (15)	3	LEM	LDW280-25570	LTA 5 (15)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. / GAEC SCH NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17361 -17, & -18				PART NO. LDW280-17361- 19				PART NO. LDW280-17361-13,-14,-15-21 & -22		51-4	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1	1.10	2	3						
REV	A	A	A	A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED		GRUMMAN REL INFO A	
LAST DASH NO. USED	-22	PRIM NO.	CE001
			207 PP12

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
$\pm 1/32$ $\pm .020$ $\pm 1/2°$

ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100 | LINE ITEM # 1 | DOCUMENTATION TYPE II

DRAWN BY	J. BIANCHINO 11/4/65	RELIABILITY	—
LAYOUT BY	J. ROGERS		
CHECKED BY	EG 11-10-65		
GR LEADER			
VEH DES INT			
STRUCTURES	1/5/66	PROJ ENGR	1/10
STRUCTURES	1-4	REL GROUP	1-11-66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CLIP
DESCENT STAGE ~ E.R.A. SUPPORT
LATERAL ~ UPPER INTERCOSTAL

SIZE	CODE IDENT NO.		
B	26512	LDW280-17361	A

SCALE NONE | SHEET 1 OF 4

ENG 77.1 9-64

SWR

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1,1.10,2 & 3						E.O.A1 (R)	ADDED SH 1.10., SH. 1 OF 4 WAS 1 OF 3 IN F/D FOR -19, TRIMMED TAB TO BASIC FLANGE WIDTH TYP. BOTH ENDS. - REMOVED -11 & -12 AND REPLACED WITH -21 & -22	LTA-5,-8 LEM-1	-19	-11,-12 LB	E.ERICKSON 5-12-66		

FOR CONTINUATION OF REVISIONS SEE SHEET _____

ENG 77.3 5-65

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17361	A

SCALE NONE — SHEET 1.10

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17361-22	E	CLIP	AL ALLOY SH	7075	QQ-A-283	.040x2 1/8x6 1/8	T6	88	
		-21		CLIP				.040x2 1/8x6 1/8			
		-19		ANGLE				.050x2 1/4x9 5/8			
		-18		STIFFENER				.050x1 5/8x6			
		-17		STIFFENER				.050x1 5/8x6			
		-15		STIFFENER				.050x1 3/4x5 1/2			
		-14		CLIP				.040x1 3/8x3 1/8			
		LDW280-17361-13	E	CLIP	AL ALLOY SH	7075	QQ-A-283	.040x1 3/8x3 1/8	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17361	A

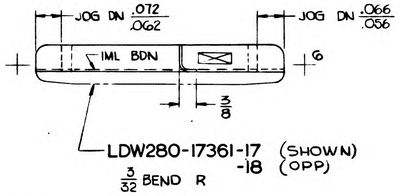
SCALE NONE SHEET 2.00

ENG 77.2 7-65

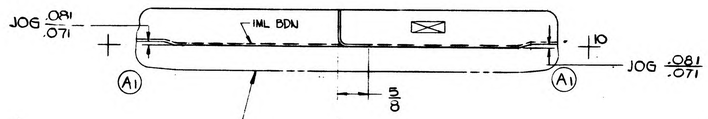
01

NAS 9-1100

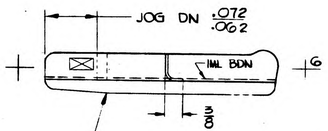
NOTE
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. ALL ABBREVIATIONS ARE IN ACCORDANCE WITH MIL-STD-12 EXCEPT AS FOLLOWS: E.R.A.(ELECTRONIC REPLACEABLE ASSEMBLY).



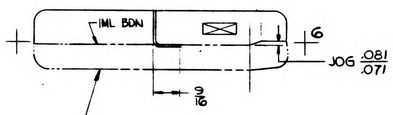
LDW280-17361-17 (SHOWN)
-18 (OPP)
3/32 BEND R



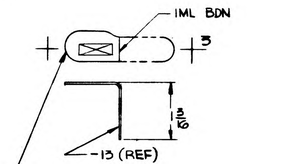
LDW280-17361-19
1/8 BEND R



LDW280-17361-15
3/32 BEND R



A1
LDW280-17361-21 (SHOWN)
-22 (OPP)
3/32 BEND R



LDW280-17361-13 (SHOWN)
-14 (OPP)
3/32 BEND R

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .010R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK			
LEM	SIZE D	CODE IDENT NO. 26512	LDW280-17361 △
MODEL OR END ITEM	SCALE FULL		SHEET 3

FOR PHOTO REPRODUCTION K2

01 NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17362-11;12,-13,-14 & -15		GAEC SCH NO. 51-5	
LEM	LDW280-25581	LEM-3(33)	1 EA
LEM	LDW280-25581	LEM-2(32)	1 EA
LEM	LDW280-25581	LTA-8(18)	1 EA
LEM	LDW280-25581	LTA-5(15)	1 EA
LEM	LDW280-25581	LEM-1(31)	1 EA

(3)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1	1.10	2	3					
REV	A	A							
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	
LAST DASH NO. USED	-15

GRUMMAN REL INFO A
PRIM NO. 46001
207 PP12

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 | LINE ITEM # 1 | DOCUMENTATION TYPE II

DRAWN BY	HERB SCHWETER 11/1/65	RELIABILITY	
LAYOUT BY	R. QUEVEDO 11/3		
CHECKED BY	11-3-65		
GR LEADER	11/3/65		
VEH DES INT	11/4/65		
STRUCTURES	11/29/65	PROJ ENGR	1/18
STRUCTURES	1-24	REL GROUP	12/29/66
WEIGHTS	1-25-66		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CHANNEL
DESCENT STAGE ~ RH FWD BM PNL
PYRO RELAY BOX SPT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17362	A
SCALE NONE		SHEET 1 OF 4	

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SPECIAL LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1, 1.10						✓	EO.A1	ADDED N/A LDW280-25581 FOR LTA-5(15), LTA-8(18) & LEM-1(31) REMOVED N/A LDW280-23581 FOR LTA-3(13), LTA-5(15), LTA-8(18), LEM-1(31) THRU LEM-6(56) FOR-11 THRU-15. SH 1 OF 4 WAS SH. 1 OF 3, ADDED 1.10.	LTA-3-5-8 LEM-1 THRU-6		✓ LB	F. APPROVED 4-14-66		
	2	1, & 1.10						✓	EO.A2 (R)	ON-11,-12,-13,-14 & -15 ADDED N/A LDW280-25581 FOR LEM -2(32) & LEM-3(33) WITH REQUIREMENTS OF IEA.	LEM-2 & LEM-3	NOT	REQD SP	DAVELLA 6-2-66		

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 5-64

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17362	A
SCALE NONE		SHEET 1.10	

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17362-15	E	CHANNEL	AL ALY SH	QQ-A-283	7075	.024×6 7/8×13 5/8	CM,T6	88	3A
		-14						.032×6 5/8×14 7/8			6D
		-13						.032×6 5/8×14 7/8			6D
		-12						.032×6 5/8×11 1/2			6B
		LDW280-17362-11	E	CHANNEL	AL ALY SH	QQ-A-283	7075	.032×6 5/8×11 1/2	CM,T6	88	6B

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP14-9030
CM	CHEM-MILL	LSP14-26100
T6	AL HEAT TREAT	MIL-H-6088

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17362

SCALE NONE SHEET 2

ENG 77.2 7-65

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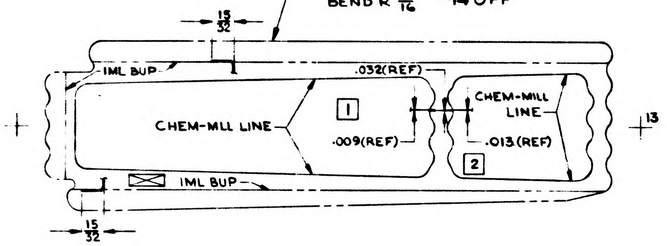
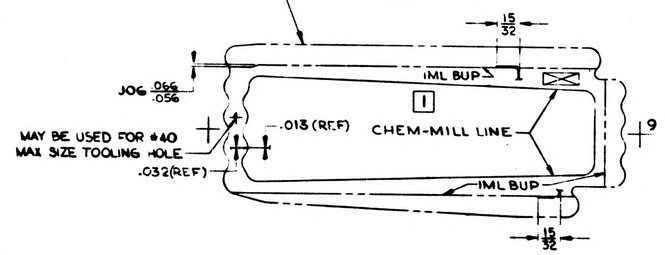
NAS 9-1100

LDW280-17362

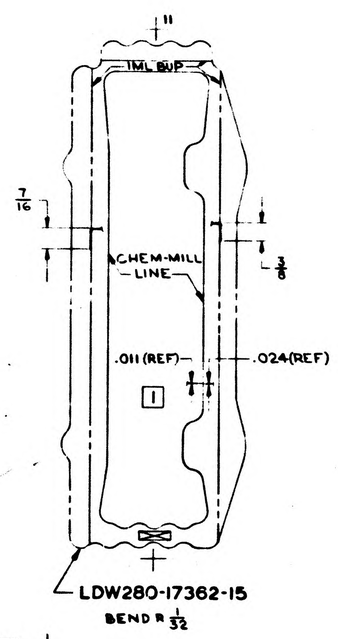
LDW280-17362-13 SHOWN
BEND R 1/16 -14 OPP



LDW280-17362-11 SHOWN
BEND R 1/16 -12 OPP



NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS, EXCEPT AS NOTED



MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS TO BE HEGION MARKED	✓
FILLET AND RADIUS CORNER RADII TOLERANCES OVER TO INCL ± .010 OVER 1/8 TO 1/4 IN ± .015 OVER 1/4 IN ± .020	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2 3 MIN THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT RADIUS INTERSECTING SURFACES	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATED READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0002 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL STD-10	
300 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS BREAK ALL EDGES .015-.030	
INSPECTION INFORMATION MINIMUM PERMISSIBLE RADIUS EDGE DISTANCE MARKED G	
SYMBOL ⌐ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF ARC RAD & RIB AL ALY SHEETS SHOWN BOW 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	V

LDW280-17362 -11 & -12

CHEM-MILL LINE TOLERANCE: ± 1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ± 1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040		
SYMBOL	THICKNESS AFTER CHEM-MILLING	DEPTH OF CUT
1	.013 +.003 -.002	.019(REF)
2		

LDW280-17362-13 & -14

CHEM-MILL LINE TOLERANCE: ± 1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ± 1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040		
SYMBOL	THICKNESS AFTER CHEM-MILLING	DEPTH OF CUT
1	.009 ± .002	.023(REF)
2	.013 +.003 -.002	.019(REF)

LDW280-17362-15

CHEM-MILL LINE TOLERANCE: ± 1/16 WHERE DEPTH OF ETCH IS .040 OR LESS (EXCEPT AS NOTED) ± 1/32 WHERE DEPTH OF ETCH IS GREATER THAN .040		
SYMBOL	THICKNESS AFTER CHEM-MILLING	DEPTH OF CUT
1	.011 ± .002	.013(REF)

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L.I., NEW YORK

SIZE	CODE IDENT NO.	LDW280-17362
D	26512	

LEM | SCALE FULL | SHEET 3

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NAS 9-1100

LDW280-17362 B

A

K2

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HG
ENG 22.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-17362 | EO NO. B1
CONTROL INFO NO. LM-2-2968

EXTEND EFF OF -13, -14 AS SHOWN -
-13, -14, N/A LDW 280-23581, LTA-3(13), LM-4(34),
LM-5(35), LM-6(36) (1) EA REQD/MOD

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: DETAIL PARTS REQD FOR LATER EFFECTIVITIES

DESCRIPTION OF EO: ADDED IN H/B FOR -13(1), -14(1), N/A LDW280-23581, LTA-3(13), LM-4(34), LM-5(35), LM-6(36)

GAEC EO RELEASE: C | 16 | 11265

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3(13), LM-4(34), LM-5(35),	LM-6(36)

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REWORK | REQD SCRAP

	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
	[illegible]	11/15				CAW 11/3/66	CAW 11/3/66	RMC(E) 11-7-66
	-6-	VDI						Grad. 11/4/66

PRIORITY: C
DRAWING TITLE: CHANNEL-D.S. - R.H. F.B.P. PYRO RELAY BOX SUPPORT
DRAWING NO.: LDW280-17362
EO NO.: B1

ISSUED BY: LIAISON Co Farley X3604 11/3/66 SECTION: Vo Do Io GROUP NO. 335 PL 35 EA

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO280 | EO NO. 478
CONTROL INFO NO. LDW280A5543

* E.M.P.

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280M17179	B1	SEE DRAWING
M17193	A3	
M17207	B5	
M17272	B1	
M17282	B1	
M17299	B1	
M17301	B4	
M17331	D1	
M17360	A7	
M17488	B1	
M17502	B1	
M17506	A1	
M17641	A3	
-17131	C4	
-17162	D1	
-17231	B5	
-17362	B2	
-17375	B3	
-17661	A1	
-17742	A1	
-17969	B1	
-18062	B2	
-18101	A4	
-18118	A1	
-23689	A1	
-23691	B3	
-23694	B1	
-23722	A4	
-54516	B4	
LDW280-		SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

THIS IS AN ORIGINAL EO

DETAIL SPEC REQ | CL I ENGRG CNG | CL II ENGRG CNG

REASON FOR EO: ADDITIONAL REQUIREMENTS

DESCRIPTION OF EO: FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.

GAEC EO RELEASE: FR 2/6/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-7(37) LEM-8(38) LEM-9(39)	
LEM		LEM-10(40) LEM-11(41) LEM-12(42)	
LEM		LEM-13(43) LEM-14(44) LEM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: NOT REWORK | EO'D SCRAP

APPROVED BY: V.P.I. 6 | DATE: 2/15/67

SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG | GOVT

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 478

ISSUED BY M. GREY / J. STRAKOSCH · X4153 SECTION VEHICLE DESIGN INT. GROUP NO. 280 PL 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO280 | EO NO. 543
CONTROL INFO NO. LDW280A-6091

ADD LTA-3DR EFF FOR THE FOLLOWING DRAWINGS AND DASH NUMBERS AS NOTED BELOW:

DRAWING	** DASH NO	TITLE	CHANGE NO	QTY/MOD	N/A
LDW280-17623	-13	SEE DWG	B4	2	LDW280-23566
				8	LDW280-23578
LDW280-17744	-17		B2	1	LDW280-23572
"	-19			1	"
"	-21			1	"
LDW280M17612	-1		A5	1	"
LDW280M17613	-1		A3	1	"
LDW280M17639	-3		C2	1 EA	LDW280-23572 LDW280-23532
LDW280-17362	-13		B3	1	LDW280-23581
"	-14			1	"
LDW280-17375	-13		B4	1	"
"	-15			1	"
"	-16			1	"
LDW280-17654	-13		B3	1	"
"	-17			2	"
"	-19			2	"
"	-21			1	"
"	-23			1	"
"	-24			1	"
LDW280-17213	-19		C2	1	LDW280-23585
LDW280-17436	-11		B3	1	"
"	-15			2	"
"	-17			1	"
"	-21			1	"
LDW280M17282	-5		B2	1	"
"	-7			1	"
LDW280M17283	-5		C1	1	"
LDW280M17284	-1		A2	1	"
LDW280M17463	-1		A2	1	"
LDW280M17547	-2		A3	1	"
LDW280-17174	-11		C3	1	LDW280-23590
"	-17			1	"
LDW280-17449	-11		A2	1	LDW280-23591
LDW280-17450	-19		B3	1	"
"	-20			1	"
LDW280-17451	-15		A2	1	"
"	-16			1	"
LDW280-17689	-15		B1	1	LDW280-23597
"	-17			1	"

DETAIL SPEC REQ | CL II ENGRG CHG ✓ | CL I ENGRG CHG | LCD19-1242 | 3/22

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: FOR ** ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 4/4/67 C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3DR(46)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: NOT REQD REWORK | SCRAP
APPROVED BY: [illegible] DATE 3/28/67
5 VDI SUPPORT | RELIAB. GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ. ENGRG
W/H 3-30-67 3-30-67 4/4/67

PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO280
EO NO.: 543

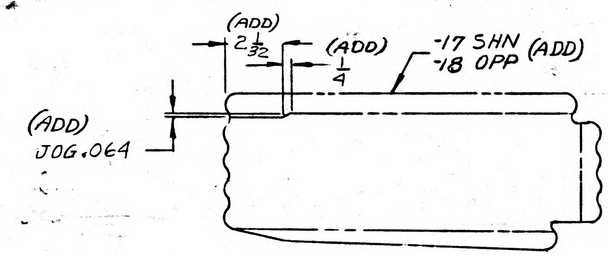
ISSUED BY E. FRANK / J. STRAKOSCH X1153 SECTION VDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512 *
ENG 32.1 REV 3-66
ENGINEERING ORDER

DWG. NO. LDW280-17362		EO NO. B4
CONTROL INFO NO. LDW280A9066		

CREATE -17 & -18 IDENTICAL TO -11 & -12 EXCEPT NO CHEM-MILL AS NOTED.
ADD FOR -17 & -18 N/A LDW280-25581 EFF LTA-5(15) 1 REQD EA/MOD
REMOVE LTA-5(15) EFF FROM -11 & -12



LFM

*NEW PARTS PER E.O FOR LTA-5(5) REWORK

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	J	LCD 1866	5

REASON FOR EO	DESCRIPTION OF EO	F EO RELEASE GAEC
REPAIR OF LTA-5(5) (FIRE DAMAGE)	ADDED -17 & -18 & REMOVED LTA-5(15) EFF FROM -11 & -12	JK 9/12/67

MODEL	EFFECTIVITY: PROGRAMS AS/MMA-NO. E.I	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	LFM 41	LTA-5(15)	

DRAWING CHANGE REQD: REVISE DWG *	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP ✓

APPROVED BY			DATE			SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
JAS			9/8/67			VDI		9/8/67	9/11/67		9/11/67

PRIORITY	DRAWING TITLE	DRAWING NO.	EO NO.
C	CHANNEL-DESCENT STAGE RH. FWD PANEL PYRO RELAY BOX SPT.	LDW280-17362	B4

ISSUED BY J. ANDERSEN / J. STRASSCH X1153 SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 1347
CONTROL INFO NO. LDW280B 7395

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17352 ✓	A4	SEE DWG
-17354 ✓	C1	
-17356 ✓	B3	
-17362 ✓	B5	
-17365	B4	
-17366	C3	
-17369	A5	
-17375	C1	
-17379	D4	
LDW280-17381	B3	SEE DWG

* APPLICABLE DASH NOS (5)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. 10 CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD.

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM —*

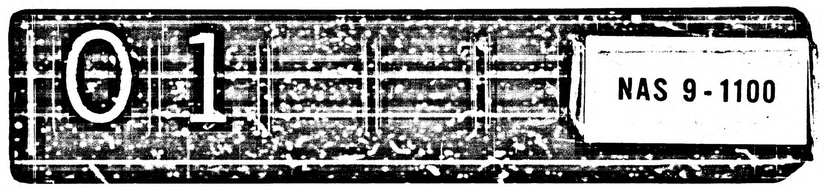
GAEC EO RELEASE: 4/16/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	—	LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO -
DISPOSITION OF PARTS: REWORK | SCRAP ✓
APPROVED BY / DATE: VDI | SUPPORT | RELIAB GROUP | GROUP LEADER 4-2-69 | STRESS GROUP 4/8/69 | LIAISON ENGRG 4/16/69 | PROJ 4/16/69

PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO 280
EO NO.: 1347

PS 2869 ISSUED BY MEVORAH / THORTUSEN X86046 SECTION NBI DES INT GROUP NO 335 R 25



ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENGR. NO. LEO 280 | EO NO. 1541
CONTROL INFO NO. LDW 280B 8079

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40) [redacted]
ADD LTA-11 ([redacted] 23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING NO *	TITLE	CHANGE NO
LDW280-17337	SEE DWG	D 2
341		E 2
343		C 4
344		B 4
347		B 4
348		C 5
349		C 2
356		B 4
362		B 6
LDW280-17327	SEE DWG	B 5

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG 99 PG 3-445 & 96 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: [redacted] 8869 8/8/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11 ([redacted] (23)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: NAT. REQ'D | REWORK | SCRAP

PRIORITY: C

DRAWING TITLE: SEE DRAWINGS

DRAWING NO.: LEO 280

EO NO.: 1541

APPROVED BY								
DATE	7-29-69			8/8/69	8-2-69		8-8-69	8-9-69
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GAEC

8-12-69 ISSUED BY G. HANSMANN X87222 (ML) SECTION VDI GROUP NO 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1691

CONTROL INFO NO. LDW 280 B B4B7

FOR THE DWGS LISTED BELOW DELETE LM-10 (40) THRU LM-14 (44) & LTA-11 (23) EFF. FROM THE FOLLOWING DETAILS

DWG NO (#)	CHANGE NO	DWG NOMENCLATURE
LDW 280 - 17362-13	B7	CHANNEL
-17362-14		CHANNEL
-17375-13	C3	CLIP
-17375-23		CLIP
-17375-24		CLIP
-17654-23	B8	CHANNEL
-17654-24		CHANNEL
-17654-13		DOUBLER
-17654-17		CLIP
-17654-19		CLIP
LDW 280 - 17654-21		CHANNEL

87222

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | LCO 3494 PKG 93

REASON FOR EO: PYRO RELAY BOX RELOCATED FOR H_2O TANK CLEARANCE.

DESCRIPTION OF EO: FOR (#) REMOVED LM-10 (40) THRU LM 14 (44) & LTA-11 (23) EFF.

(5)

GAEC EO RELEASE: 12-3-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10 (40) THRU	
		LM-14 (44) &	
		LTA-11 (23)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
			✓

	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	QUAL
	[illegible]	9/23/69			9-23-69	[illegible]		9/24/69	9/24/69
	VDI								

PRIORITY: C

DRAWING TITLE: SEE DWGS

DRAWING NO.: LEO 280

EO NO.: 1691

9/26/69 ISSUED BY BONELLI X1392

SECTION V.D.1. GROUP NO. 335 PL 25

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO:	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.		PART NO.		GAEC SCH NO.		PART NO.		GAEC SCH NO.	
								LEM	LDW280-28570	LEM-1(31)	1EA
								LEM	LDW280-28570	LTA-8(18	1EA
								LEM	LDW280-25570	LTA-5(15)	1EA
								MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
								PART NO. LDW280-17364-11-13-15-17&-19		GAEC SCH NO.	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00		2.00	3.00					
REV									
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	
LAST DASH NO. USED	- 19

GRUMMAN REL INFO

PRIM NO.	LD001
207	PP12

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 LINE ITEM # 1 DOCUMENTATION TYPE II

DRAWN BY	J.Gardella 10-1-65	RELIABILITY	
LAYOUT BY	J. Rogers J.J.R. 1-7-66		
CHECKED BY	WCG 1/12/66		
GR LEADER	[signature] 1/12/66		
VEH DES INT	[signature] 1/12/66		
STRUCTURES	[signature] 2/1/66	PROJ ENGR	[signature] 2/24
STRUCTURES	[signature] 2/18	REL GROUP	[signature] 2/26
WEIGHTS	[signature] 2/24		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

ANGLE
DESCENT STAGE ~ ELECTRONIC REPLACEABLE ASSEMBLY SPT ~ VERTICAL

SIZE	CODE IDENT NO.	
B	26512	LDW280-17364

SCALE NONE SHEET 1.000F 3

ENG 77.1 9-64

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17364-19	E	ANGLE	AL ALLOY SH	QQ-A-283	7075	.071 x 2 1/4 x 65 1/8	T6	88	
		-17						.063 x 2 5/8 x 8 3/8			
		-15						.071 x 2 1/4 x 61 1/8			
		-13						.071 x 2 1/8 x 66 1/8			
		LDW280-17364-11	E	ANGLE	AL ALLOY SH	QQ-A-283	7075	.056 x 2 1/8 x 65 1/8	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP-14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17364

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100

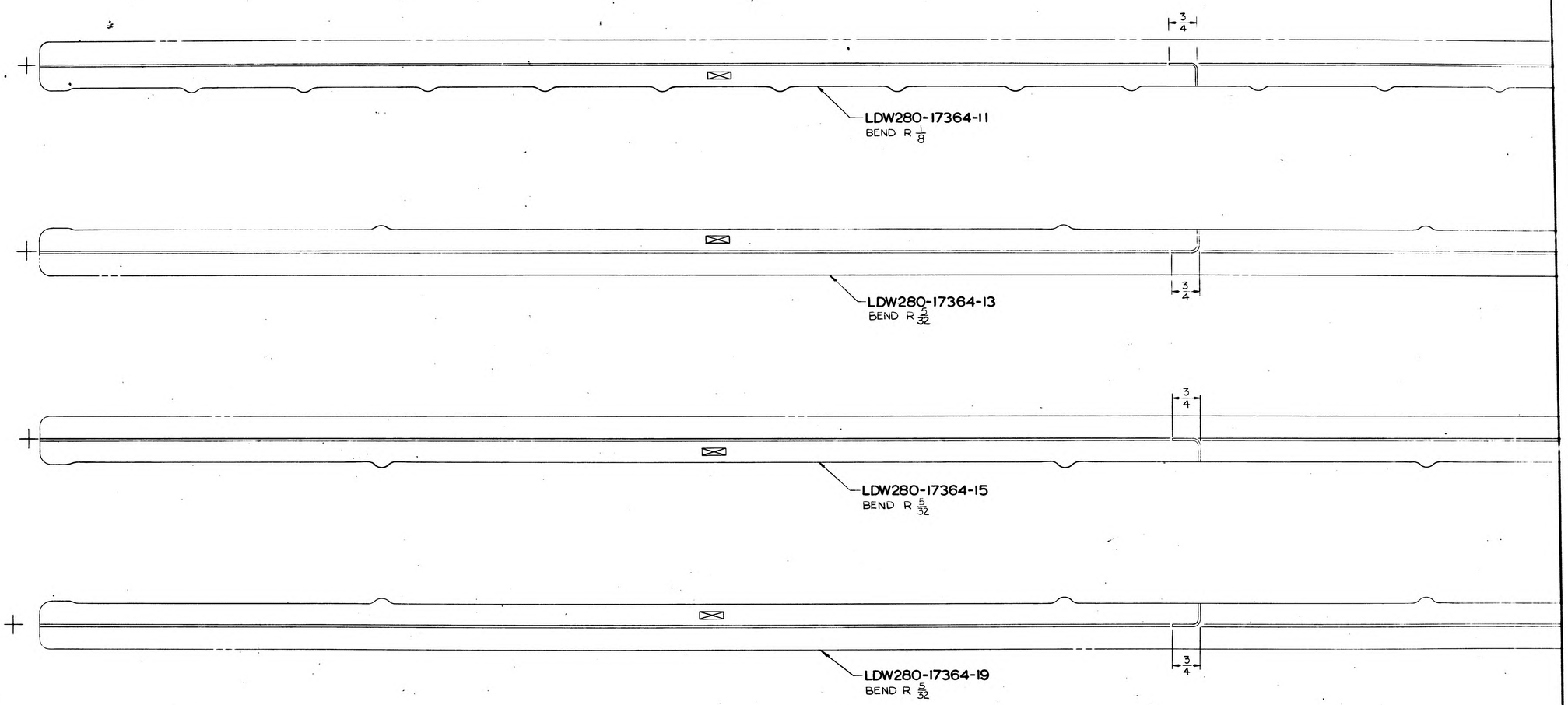
9 8 7 6

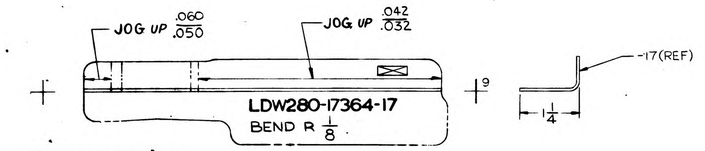
C

B

A

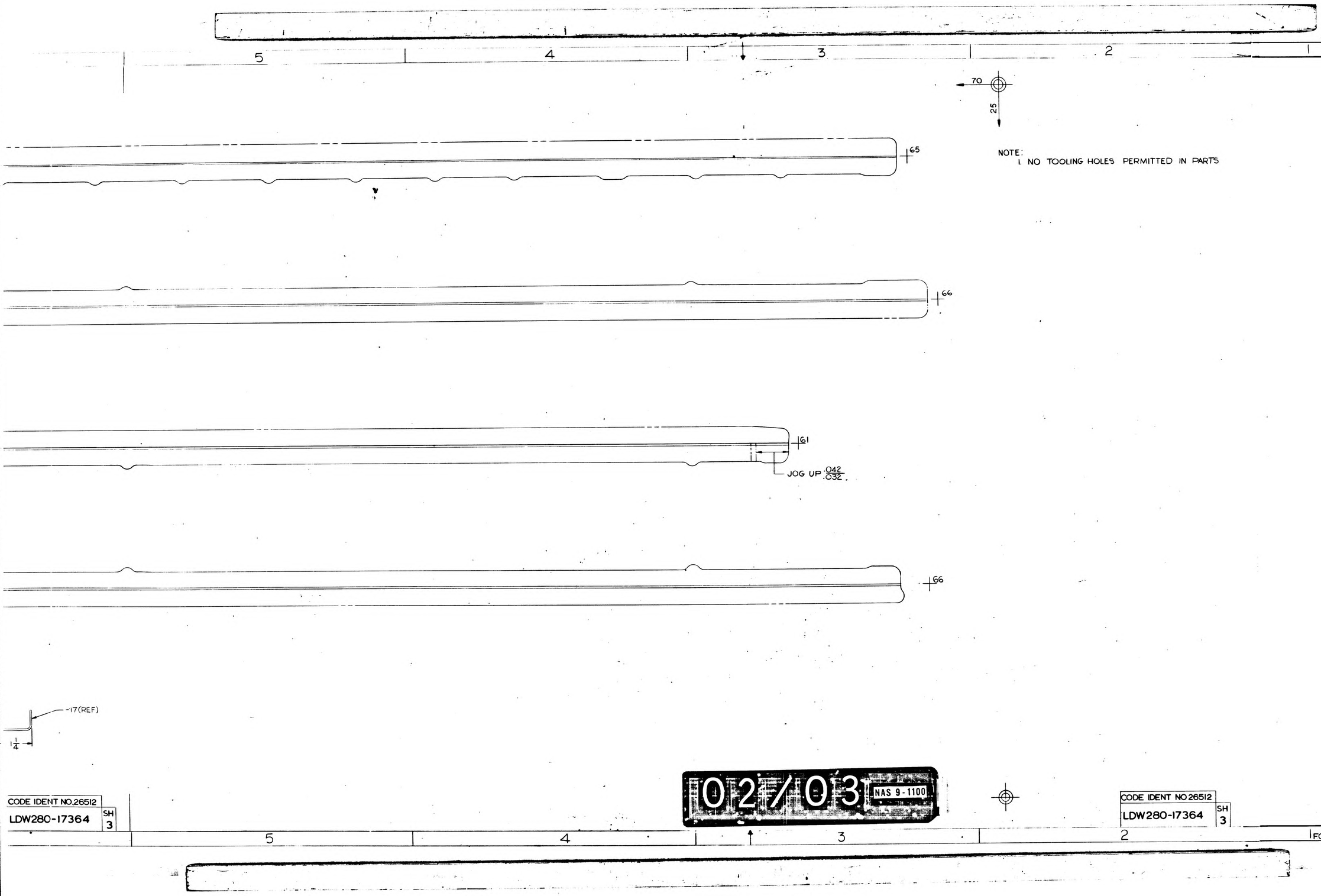
3/3





01/03 NAS 9-1100

CODE IDENT NO.26512	
LDW280-17364	SH 3



MANUFACTU
UNLESS OTH
NOTES CHECKED

RUBBER STAMP PAI
AND ALL OTHER MAR
IN VERSION MARKED
USE BOTH SIDES IF

FILLET AND INSIDE C
RADII TOLERANCES
.018R TO .062R
.063R TO .250R
OVER .250R

DEPTH SHOWN FOR T
HOLES IS FULL THDS
BEYOND PERMISSIBLE

EXTERNAL THREAD LE
SHOWN INCLUDES
2 IMPERFECT THREAD

DO NOT CADMIUM PL
HOLES OR SURFACES
WITH DOUBLE ASTER

MISMATCH STEP OF
PERMISSIBLE DUE TO
OF CUTTERS AT INSID
INTERSECTING SURFA

DIAMETERS MARKED
MUST BE CONCENTRI

READING

HOLES MUST BE KEPT
CHROME PLATING SOL

ALL DIMENSIONS SHO
AFTER CADMIUM PLATI
THICKNESS OF PLATE
TO .0005 MAX, MIN TO
AS .0002 ON THREADED
NO ALLOWANCES FOR
HOLES

125 SURFACE RO
INCLUDING A
PER MIL-STD-

300 FOR ALL DRIL

REMOVE ALL BURRS
BREAK ALL EDGES .01

INSPECTION INFORMATI
MINIMUM PERMISSIBLE
AVERAGE EDGE DISTANC
MARKED IS

SYMBOL △ DENOTES
TO BE MACHINED

UNLESS OTHERWISE SP
TOLERANCE ON FLANGE

LENGTHS OF AN NAS
RIVETS SHORTER THAN
NOT SPECIFIED

TOLERANCE ON LOFTED
DELINEATIONS IS ± 1/2

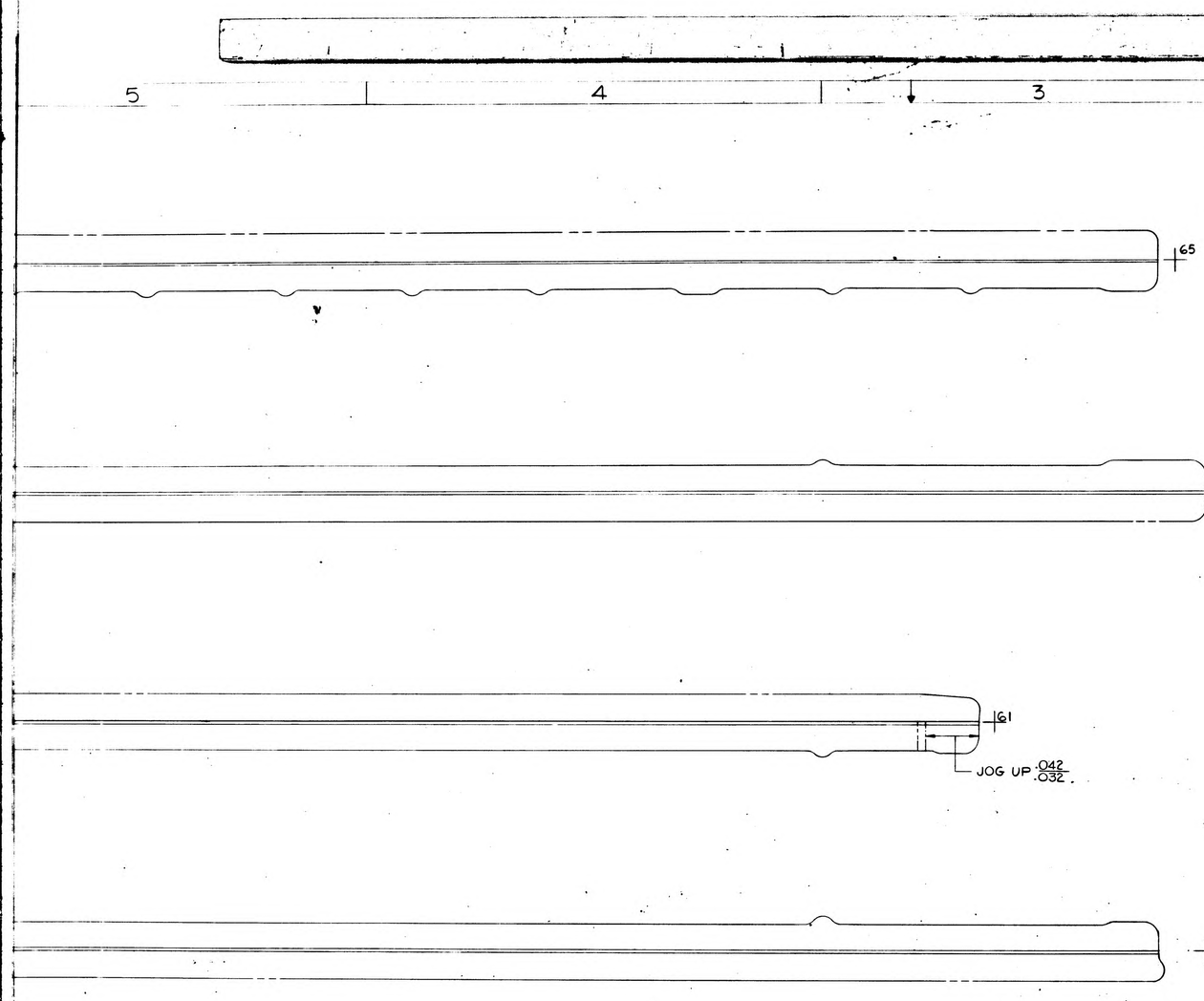
CODE IDENT NO.26512
LDW280-17364 SH 3

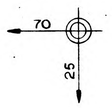
02/03 NAS 9-1100

CODE IDENT NO 26512
LDW280-17364 SH 3

LEM
MODEL OR END ITEM
GRUMMAN AIRCRAFT ENG. CORP. BETHPAGE, N.Y.
SIZE H | CODE IDENT NO. 26512 | LDW280-17
SCALE FULL | SH

FOR PHOTO REPRODUCTION





NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ~~USE AREA SHOWN IN ASSEMBLY~~	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL X DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

DWG SIZE IS 34
PRINTING INFO ONLY
FULL SIZE SHEET AREA ON 36 | = 22.0 SQ. FT.
½ SIZE SHEET AREA (14 UP PLOT) = 5.5 SQ. FT.
PRINT TRIM LINE

03703 NAS 9-1100

CODE IDENT NO 26512	
LDW280-17364	SH 3

LEM
MODEL OR END ITEM
GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK
SIZE H | CODE IDENT NO. 26512 | LDW280-17364
SCALE FULL | SHEET 3.00

LDW280-17364 A

FOR PHOTO REPRODUCTION

K2

ENG 734 644

LEM	LDW280-28528	LEM-1 (31)	3	LEM	LDW280-28528	LEM-1 (31)	2	LEM	LDW280-28528	LEM-1 (31)	1 EA
	LDW280-28528	LTA-8 (18)	3		LDW280-28528	LTA-8 (18)	2		LDW280-28528	LTA-8 (18)	1 EA
	LDW280-25528	LTA-5 (15)	3		LDW280-25528	LTA-5 (15)	2		LDW280-25528	LTA-5 (15)	1 EA
	LDW280-52528	LEM-6 (36)	3		LDW280-52528	LEM-6 (36)	2		LDW280-52528	LEM-6 (36)	1 EA
		LEM-5 (35)	3			LEM-5 (35)	2			LEM-5 (35)	
		LEM-4 (34)	3			LEM-4 (34)	2			LEM-4 (34)	
		LEM-3 (33)	3			LEM-3 (33)	2			LEM-3 (33)	
	LDW280-52528	LEM-2 (32)	3		LDW280-52528	LEM-2 (32)	2		LDW-280-52528	LEM-2 (32)	
LEM	LDW280-23528	LTA-3 (13	3	LEM	LDW280-23528	LTA-3 (13)	2	LEM	LDW280-23528	LTA-3 (13)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW 280-17365 -21		GAEC SCH NO.		PART NO. LDW 280-17365 -23		GAEC SCH NO.		PART NO. LDW280-17365 -25, -27, -29		GAEC SCH NO. 51-4	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1	1.10	2	3					
REV	A	A	A	A					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED		GRUMMAN REL INFO A	
LAST DASH NO. USED	29	PRIM NO.	LE(001)
		207	HPSA X

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS 9-1100 | LINE ITEM # 1 | DOCUMENTATION TYPE II

DRAWN BY	FITZGERALD 11-11-65	RELIABILITY	
LAYOUT BY	QUEVEDO 11-11-65		
CHECKED BY	11-11-65		
GR LEADER			
VEH DES INT	11/22/65		
STRUCTURES	11/22/65	PROJ ENGR	11/30
STRUCTURES	11-24	REL GROUP	12-1-65
WEIGHTS	11/29/65 11/29		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER
DESCENT STAGE - R.H. FWD
BEAM PANEL - OUTB'D UPPER

SIZE	CODE IDENT NO.	
B	26512	LDW280-17365 A

SCALE NONE | SHEET 1 OF 4

ENG 77.1 9-64

JWP

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SUPERSEDES LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1, 1.10, 2 & 3							EO A1	REMOVED -11, -13, -15, -17 & -19 STIFFENERS AND ADDED -21, -23, -25, -27, & -29 RESPECTIVELY. SHEET 1 OF 4 WAS SHEET 1 OF 3. ADDED SHEET 1.10 (R)	LEM-1 THRU-6 LTA-3, -5, -8		✓ 18	LAMBERT 3-10-66		

FOR CONTINUATION OF REVISIONS SEE SHEET

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17365	A

SCALE NONE SHEET 1.10

ENG 77.3 5-64

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17365-29	E	ANGLE	AL ALLOY SH	QQ-A-283	7075	.024x1 7/8x10 1/2	T6	88	
		-27						.028x1 7/8x10 1/2			
		-25						.036x1 7/8x10 5/8			
		-23						.045x1 7/8x10 3/4			
		LDW280-17365-21	E	ANGLE	AL ALLOY SH	QQ-A-283	7075	.056x1 7/8x10 3/4	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP 14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17365	A

SCALE NONE SHEET 2

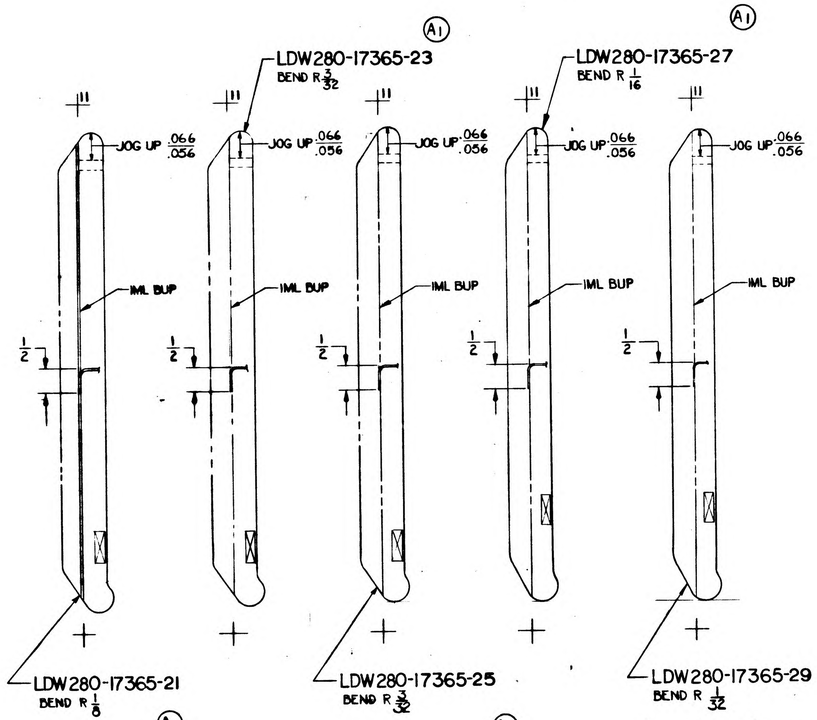
ENG 77.2 7-65

01

NAS 9-1100

LDW280-17365 A

OVERLAY/TRAM D.J.



25

15

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .018R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF F.ATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES.	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL.STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL X DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

NAS 9-1100

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
LEM	SIZE D	CODE IDENT NO. 26512	LDW280-17365 A
MODEL OR END ITEM	SCALE FULL		SHEET 3

DRG 73-3 644

8 7 6 5 4 3 2 1

2 FOR PHOTO REPRODUCTION

LDW280-17365 A

01

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LEO 280 | EO NO. 125
CONTROL INFO NO. LDW 280-6876

FOR THE NOTED PART NOS. REVISE M/B AS FOLLOWS:

NOW: N/A LDW 280-54528 EFF: LEM-4(34), LEM-5(35), LEM-6(36)
N/A LDW 280-52528 EFF: LEM-2(32), LEM-3(33)
N/A LDW 280-23528 EFF: LTA-3(13)

WAS: N/A LDW 280-23528 EFF: LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35), LEM-6(36)

PART NO.*	CHG NO	PART NO.*	CHG NO
✓ LDW 280-17183-23	B1	✓ LDW 280-17612-15,17	A2
✓ LDW 280-17365-21,23,25,27,29	B1	✓ LDW 280M17109-6	C2
✓ LDW 280-17366-21,23,25	B2	✓ LDW 280M17416-4	B3
✓ LDW 280-17369-11,13,15	A1	LDW 280M17420-1	A1
✓ LDW 280-17604-11,13	A1		
✓ LDW 280-17605-11,13	A1		

ALL OTHER NEXT ASS'Y. & EFF. REMAIN UNCHANGED

2

DETAIL SPEC REQ | CL II ENGRG CHG | ✓ CL I ENGRG CHG

REASON FOR EO: WEIGHT CONTROL REQUIREMENTS

DESCRIPTION OF EO: REVISED M/B ON PART NO.* WAS: N/A LDW 280-23528 EFF: LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35), LEM-6(36)

GAEC EO RELEASE: WHITE 6-9-66

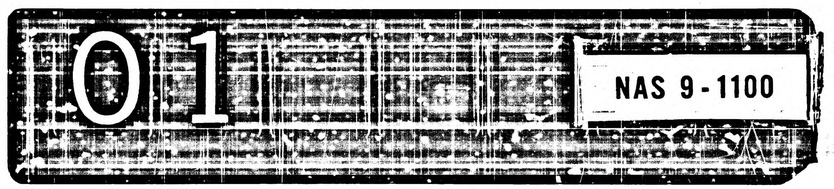
MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-4(34)	
		LEM-5(35)	
		LEM-6(36)	

DRAWING CHANGE REQD: ✓ REVISE WG | RECORD EO
DISPOSITION OF PARTS: NOT REQ'D REWORK | SCRAP

APPROVED BY	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
DATE	5/26/66	5/27	VDI	6-6-66

PRIORITY: C
DRAWING TITLE: SEE DWGS
DRAWING NO.: LEO 280
EO NO.: 125

ISSUED BY G. BECKER/J. STRAKOSCH X1153 SECTION VEH. DESIGN INT GROUP NO. 335 PL 35



GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280 | EO NO. 308
CONTROL INFO NO. LDW280A1001

ENG 32.2 REV 3-65

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-17344	B1	SEE DRAWING
-17347	B1	
-17348	C1	
-17349	B3	
-17352	A2	
-17354	B1	
-17356	B1	
-17365	B2	
-17366	C1	
-17369	A2	
-17379	C1	
-17380	B1	
-17381	B1	
-17382	A1	
-17383	A1	
-17384	B2	
-17385	C1	
-17388	D22	
-17393	B2	
-17395	C2	
-17397	B1	
-17398	B1	
-17399	C1	
-17400	B3	
-17412	B1	
-17413	C1	
-17414	B2	
-17415	B1	
-17416	B1	
-17417	B1	
-17418	B1	
-17419	B1	
LDW280-17420	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: ADDITIONAL REQUIREMENTS

DESCRIPTION OF EO: FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.

GAEC EO RELEASE: FR 10/15/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LEM		LEM-7(37), LEM-8(38), LEM-9(39)	LEM-7(37)
LEM		LEM-10(40), LEM-11(41), LEM-12(42)	
LEM		LEM-13(43), LEM-14(44), LEM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REQ'D REWORK | SCRAP
APPROVED BY: DATE ✓ | V.D.I. | SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG

STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
WJH 10/5/66		
	11-11-66	

PP: C
DRAWING TITLE: NOTED
DRAWING NO.: LE0280
EO NO.: 302

ISSUED BY: M. GREY / J. STRALOSCH X1153 SECTION VEHICLE DESIGN INT. GROUP NO. 280 PL 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A 5132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

LCD19-1242 2

DETAIL SPEC REQ | CL II ENGRG CHG | ✓ | CL I ENGRG CHG |

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

(R) GAEC EO RELEASE: JK 4/4/67 C

EFFECTIVITY				DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY							
MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	REVISE DWG	RECORD EO	REWORK	SCRAP	DATE		SUPPORT	REL IAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
LM		LTA-3D/R (46)		✓		NOT	REQD	5	YDI			5/8/67	4/4/67	3-30-67	4/6/67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LEO280

EO NO.: 541

ISSUED BY G. BECKER/J. STAKUSCH X1153 SECTION YDI GROUP NO. 335 PL 25

LEO
NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 1347
CONTROL INFO NO. LDW280B 7395

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17352 ✓	A4	SEE DWG
-17354 ✓	C1	
-17356 ✓	B3	
-17362 ✓	B5	
-17365 ✓	B4	
-17366	C3	
-17369	A5	
-17375	C1	
-17379	D4	
LDW280-17381	B3	SEE DWG

* APPLICABLE DASH NOS (5)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. 10 CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM —*

DAEC EO RELEASE: 4/16/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	DAEC SHIT NO.	SUB CONTR SHIT NO.
LM	—	LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REVISION | SCRAP ✓

APPROVED BY / DATE: VDI 4-16-69 | SUPPORT | RELIAB GROUP 8-8-69 | GROUP LEADER 4-2-69 | STRESS GROUP 4/8/69 | LIAISON ENGRG 4/16/69 | PROJ 4/16/69

PRIORITY: C

DRAWING TITLE: SEE DWG

DRAWING NO.: LEO 280

EO NO.: 1347

PS 2869 ISSUED BY MEVORAH / THORTJSEN X86046 SECTION VEH DES INT GROUP NO. 335 - 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.1 REV 3-66

DRWG. NO. LEO 280 | EO NO. 1636
CONTROL INFO NO. LDW280B8302

FOR ALL PART NUMBERS EFFECTIVE ON LM-10(40)
ADD LTA-11(23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANITY.

	DRAWING Nº *	TITLE	CHANGE Nº
	LDW280-	SEE DWG	
×	17354		C2
×	17365		B5
✓	17366		C4
	LDW280-17369	SEE DWG	A7

DETAIL SPEC REQ. | CL II ENGRG CHG | CL I ENGRG CHG ✓ LCD 3890 PKG 99 Pg 88 & 89 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11(23) REQMTS

GAEC EO RELEASE: SWB 8-27-69; JK 8-29-69; RBJ 8/29/69; [illegible] 8/29/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11(23)	

DRAWING CHANGE REQD: ✓ REVISE DWG; RECORD EO

DISPOSITION OF PARTS: NAT REQ'D REWORK; SCRAP

APPROVED BY / DATE: PGT 7-30-69; VDI; SUPPORT; RELIAB GROUP; GROUP LEADER 8/1/69; STRESS GROUP 8-7-69; LIAISON ENGRG N; PROJ ENGRG 8/7/69

PRIORITY: C

DRAWING TITLE: SEE DRAWINGS

DRAWING NO.: LEO 280

EO NO.: 1636

9/26/69 ISSUED BY G. HANSMANN X87222 (ZF1) SECTION VDI GROUP NO 335 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO 280		EO NO. 1695
CONTROL INFO NO. LDW 280 38746		

FOR THE DWGS LISTED BELOW DELETE LM-10(40) THRU LM-14(44), LTA-11(23) EFFECTIVITIES FROM ALL DASH NUMBERS* THAT NEXT ASSEMBLE INTO LDW 280-54528

DWG NO (*)	CHANGE NO.	DWG NOMENCLATURE
LDW 280-17182	C3	SEE DWG
LDW 280-17183	B6	
LDW 280-17365	B4	
LDW 280-17366	C5	
LDW 280-17369	A8	
LDW 280-17433	C7	
LDW 280-17454	B5	SEE DWG

* APPLICABLE DASH NUMBERS

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	V	LCD 3994 PKG 63 CCA 2333

REASON FOR EO: REDESIGN OF BEAM PANEL FOR H_2O, GOX & MESA SPT. STRUCTURE

DESCRIPTION OF EO: DELETED LM-10(40) THRU LM-14(44) & LTA-11(23) FROM — * FOR N/A LDW 280-54528

GAEC EO RELEASE (5)

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP
LM		LM-10(40) THRU		✓			✓
		LM-14(44)					
		LTA-11(23), "					

APPROVED BY									
DATE	9/23/69			9-22-69	9/23/69	9/23/69		9/23/69	9/26/69
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG		PROJ ENGRG	

PRIORITY: C

DRAWING TITLE: SEE DWG

DRAWING NO.: LEO 280

EO NO.: 1695

100369

ISSUED BY TDALY / THORJUSEN X86046 SECTION VEH DES INT GROUP NO. 335 PL 25

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1			X					EO A1	REMOVED -11, -13 & -15 STIFFENERS & ADDED -21, -23 & -25 RESPECTIVELY. SH 1 OF 4 WAS 1 OF 3, ADDED SH 1.10	LTA-3,5,8, LEM-1 THRU-6		✓	A. BEERS 3-10-66	X	X
	2			X					EO A2 (1)	IN FLD, FOR -17, -19, RELOCATED SECTION THRU DETAIL PARTS	NOT REQ'D	NOT	REQD(8)			

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 5-64

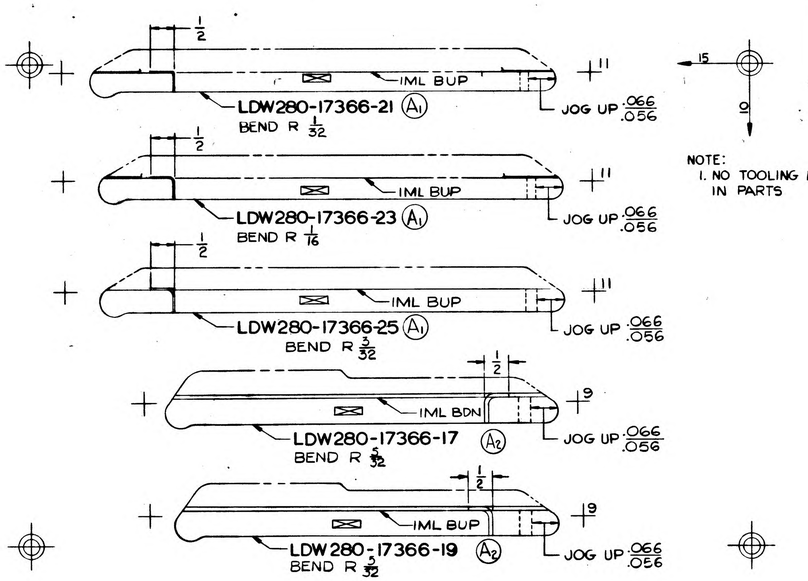
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17366	A

SCALE NONE — SHEET 1.10

01

NAS 9-1100


OVERLAY/FRAM A3
4
3
2
1
1/2
IML BUP
LDW280-17366-21 (A1)
BEND R 1/32
JOG UP .066/.056
11
1/2
IML BUP
LDW280-17366-23 (A1)
BEND R 1/16
JOG UP .066/.056
11
1/2
IML BUP
LDW280-17366-25 (A1)
BEND R 3/32
JOG UP .066/.056
11
1/2
IML BDN
LDW280-17366-17 (A2)
BEND R 5/32
JOG UP .066/.056
9
1/2
IML BUP
LDW280-17366-19 (A2)
BEND R 5/32
JOG UP .066/.056
9
15
10
NOTE:
1. NO TOOLING HOLE PERMITTED IN PARTS
MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32
LDW280-17366-A
GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK
SIZE C
CODE IDENT NO. 26512
LDW280-17366
A
LEM
MODEL OR END ITEM
SCALE FULL
SHEET 3
FOR PHOTO 1 REPRODUCTION

NAS 9-1100

01

LEM	LDW280-25597	LEM-1 (31)	1 EA
LEM	LDW280-25597	LTA-8 (18)	1 EA
LEM	LDW280-25597	LTA-5 (15)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17366-27 & -19		GAEC SCH NO.	

LEM	LDW280-28528	LEM-1(21)	1 EA
	LDW280-28528	LTA-8(15)	1 EA
	LDW280-25528	LTA-5(15)	1 EA
	LDW280-54528	LEM-6(36)	1 EA
	LDW280-54528	LEM-5(35)	
	LDW280-54528	LEM-4(34)	
	LDW280-52528	LEM-3(33)	
	LDW280-52528	LEM-2(32)	
LEM	LDW280-23528	LTA-3(13)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17366-23 & -25		GAEC SCH NO.	

LEM	LDW280-54528	LEM-6(36)	3
	LDW280-54528	LEM-5(35)	
	LDW280-54528	LEM-4(34)	
	LDW280-52528	LEM-3(33)	
	LDW280-52528	LEM-2(32)	
	LDW280-23528	LTA-3(13)	
	LDW280-28528	LEM-1(31)	
	LDW280-28528	LTA-8(18)	
LEM	LDW280-25528	LTA-5(15)	3
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17366-21		GAEC SCH NO. 51-3, 4	2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1	1.10	2	3					
REV	B	B	B	B					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED		GRUMMAN REL INFO B	
LAST DASH NO. USED	-27	PRIM NO. VE(001)	
		207 MPSAX	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 LINE ITEM 1 DOCUMENTATION TYPE II

DRAWN BY	J.Gardella 9-23-65	RELIABILITY	
LAYOUT BY	Quevedo 11-12-65		
CHECKED BY	10-9-65		
GR LEADER	11-12-65		
VEH DES INT			
STRUCTURES	12-6	PROJ ENGR	12/1/65
STRUCTURES	12-6	REL GROUP	12/1/65
WEIGHTS	12-3		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER
DESCENT STAGE-RH FWD BEAM PANEL-
OUTBOARD LWR

SIZE	CODE IDENT NO.	
B	26512	LDW 280-17366 B
SCALE NONE		SHEET 1 OF 3

ENG 17.1 9-64

01 NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	SH CHG LTR	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1			X					EO A1	REMOVED -11, -13 & -15 STIFFENERS & ADDED -21, -23 & -25 RESPECTIVELY. SH 1 OF 4 WAS 1 OF 3, ADDED SH 1.10	LTA-3,5,8, LEM-1 THRU-6		✓	A. BEERS 3-10-66		
	2								EO A2 (R)	IN FLD, FOR -17, -19, RELOCATED SECTION THRU DETAIL PARTS	NOT REQ'D	NOT	REQD (R)	MARTIN 9-1044		
B	1	1.1.10 2.00, 3.00							EO B1	ADDED -27, REMOVED -17	LEM-1 LTA-5,-8		-17	GREY 9-2266		
	2								LEO 125 (R)	IN M/B N/A FOR -21, 23 AND -25 WAS LDW280-23528 EFF. LTA-3(13) LEM-2(32) THRU LEM-6-(36)	NOTED	NOT	REQ'D			

FOR CONTINUATION OF REVISIONS SEE SHEET

ENG 77.3 5-64

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17366	B

SCALE NONE — SHEET 1.10

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17366-27	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.080 x 2 x 8 7/8	T6	88	
		-25						.040 x 1 3/4 x 10 3/8			
		-23						.028 x 1 7/8 x 10 3/8			
		-21						.020 x 1 3/4 x 10 3/8			
		LDW280-17366 19	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.080 x 2 x 8 3/4	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP 14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

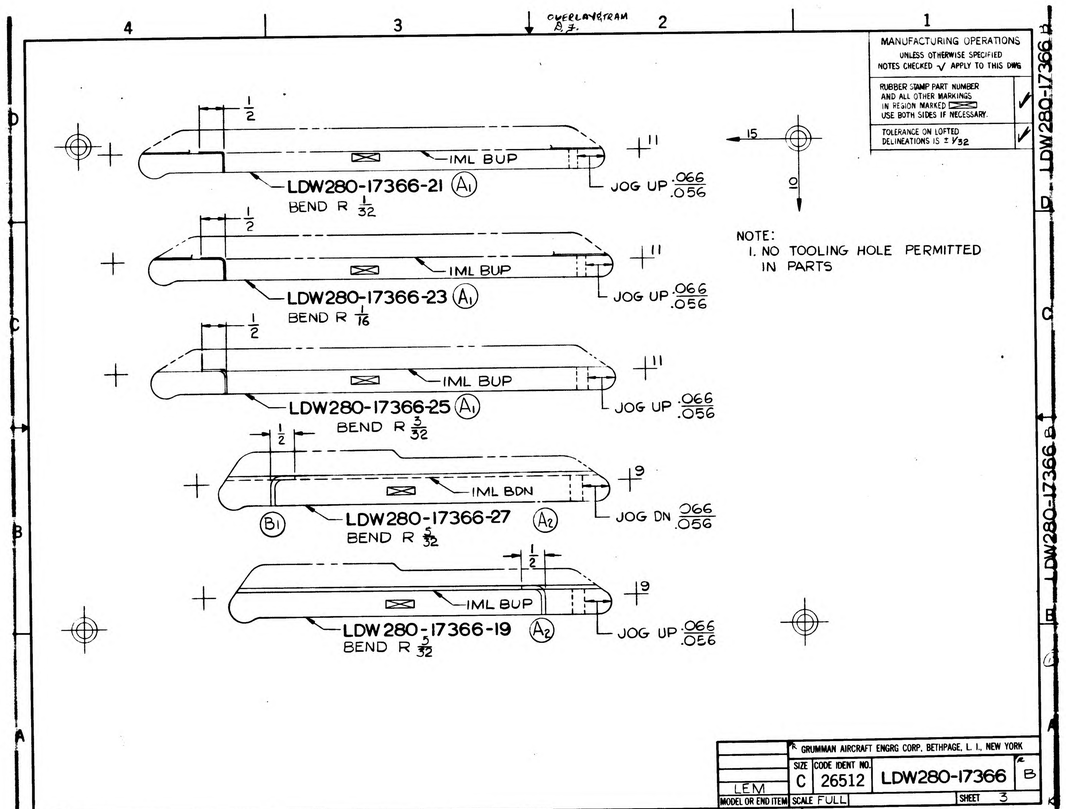
SIZE	CODE IDENT NO.		
B	26512	LDW280-17366	B

SCALE NONE SHEET 2

ENG 77.2 7-65

01

NAS 9-1100


4
3
OVERLAY FROM A/F
2
1
MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED √ APPLY TO THIS DWG
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32
1/2
IML BUP
11
LDW280-17366-21 (A1)
BEND R 1/32
JOG UP .066 .056
15
10
NOTE:
1. NO TOOLING HOLE PERMITTED IN PARTS
1/2
IML BUP
11
LDW280-17366-23 (A1)
BEND R 1/16
JOG UP .066 .056
1/2
IML BUP
11
LDW280-17366-25 (A1)
BEND R 3/32
JOG UP .066 .056
1/2
IML BDN
9
LDW280-17366-27 (B1) (A2)
BEND R 5/32
JOG DN .066 .056
1/2
IML BUP
9
LDW280-17366-19 (A2)
BEND R 5/32
JOG UP .066 .056
D
C
B
A
LDW280-17366 B1
LDW280-17366 B
GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK
SIZE C
CODE IDENT NO. 26512
LDW280-17366
B
LEM
MODEL OR END ITEM
SCALE FULL
SHEET 3
DRG 73-2 644
FOR PHOTO 1 REPRODUCTION

NAS 9-1100

ENG 32.1 REV. 1

LIAISON ENGINEERING #2

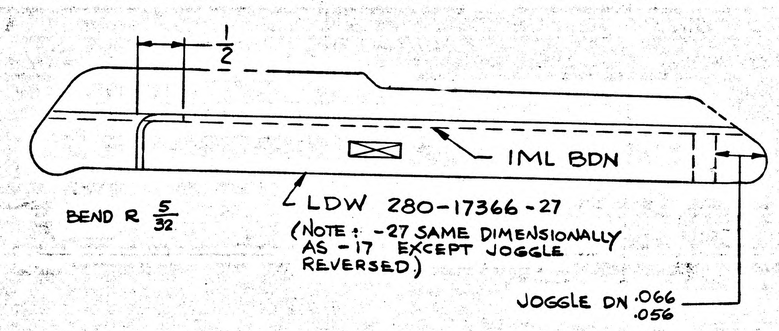
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO.	LDW 280-17366		EO NO. B1
CONTROL INFO NO.	LEM-2-2067		

(1) IN F/D & B/M - CREATE -27 ANGLE
AL ALLOY SH QQ-A-283 7075
.080 x 2 x 8⅞ T6 88 FINISH.

(2) IN F/D & B/M - REMOVE -17



DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG |

REASON FOR EO: #17 JOGGLED INCORRECTLY

DESCRIPTION OF EO: ADDED #27, REMOVED -17

GAEC EO RELEASE: 16

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-1 (31)	
		LTA-8 (18)	
		LTA-5 (15)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | REWORK | SCRAP -17

DISPOSITION OF PARTS

APPROVED BY	GPD	WBH			caw	caw		
DATE	4-20-66	5/2			4/20/66	4/20/66	5-3	4-12-66
	VDS		RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	QAPP

PRIORITY: C_2

DRAWING TITLE: STIFFENER-DESCENT STAGE, R.H. FWD BEAM PANEL

DRAWING NO.: LDW 280-17366

EO NO.: B1

ISSUED BY: [signature] X3604 4-20-66

SECTION V.D.I.

GROUP NO. 280 PL 35

01

NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 125
CONTROL INFO NO. LDW 280-6876

FOR THE NOTED PART NOS. REVISE M/B AS FOLLOWS:

NOW: N/A LDW 280-54528 EFF: LEM-4(34), LEM-5(35), LEM-6(36)
N/A LDW 280-52528 EFF: LEM-2(32), LEM-3(33)
N/A LDW 280-23528 EFF: LTA-3(13)

WAS: N/A LDW 280-23528 EFF: LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35), LEM-6(36)

PART NO*	CHG NO	PART NO*	CHG NO
✓LDW 280-17183-23	B1	✓LDW 280-17612-15,17	A2
✓LDW 280-17365-21,23,25,27,29	B1	✓LDW 280M17109-6	C2
✓LDW 280-17366-21,23,25	B2	LDW 280M17416-4	B3
✓LDW 280-17369-11,13,15	A1	LDW 280M17420-1	A1
✓LDW 280-17604-11,13	A1		
✓LDW 280-17605-11,13	A1		

ALL OTHER NEXT ASS'Y. & EFF. REMAIN UNCHANGED

2

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	✓

REASON FOR EO: WEIGHT CONTROL REQUIREMENTS

DESCRIPTION OF EO: REVISED M/B ON PART NO* WAS: N/A LDW 280-23528 EFF: LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35), LEM-6(36)

GAEC EO RELEASE: WH ID 4-8-66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LEM		LEM-4(34)	
		LEM-5(35)	
		LEM-6(36)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP	NOT REQ'D
✓				

APPROVED BY: Gr28 W.G.M. — DATE: 5/26/66 5/27 — VDI

RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
				Hunnell
				Hunnell 6-6-66

PRIORITY: C — DRAWING TITLE: SEE DWGS — DRAWING NO.: LEO 280 — EO NO.: 125

ISSUED BY G. BECKER/J. STRAKOSCH X1153 — SECTION VEH. DESIGN INT — GROUP NO. 335 — PL 35

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LE0280 | EO NO. 302
CONTROL INFO NO. LDW280A1001

ENG 32.2 REV 3-66

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS * THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-17344	B1	SEE DRAWING
-17347	B1	
-17348	C1	
-17349	B3	
-17352	A2	
-17354	B1	
-17356	B1	
-17365	B2	
-17366	C1	
-17369	A2	
-17379	C1	
-17380	B1	
-17381	B1	
-17382	A1	
-17383	A1	
-17384	B2	
-17385	C1	
-17388	D22	
-17393	B2	
-17395	C2	
-17397	B1	
-17398	B1	
-17399	C1	
-17400	B3	
-17412	B1	
-17413	C1	
-17414	B2	
-17415	B1	
-17416	B1	
-17417	B1	
-17418	B1	
-17419	B1	
LDW280-17420	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
			ADDITIONAL REQUIREMENTS	FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.	FR 9/15/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LEM		(LEM 7,37) LEM 8(38) LEM 9,39)	
LEM		LEM 10(40) LEM 11(41) LEM 12(42)	
LEM		LEM 13(43) LEM 14(44) LEM 15(45)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGR	PROJ ENGR
		NOT REQ'D / REWORK / SCRAP	VD					10/6/66		11-11-66

PD C | DRAWING TITLE: NOTED | DRAWING NO.: LE0280 | EO NO. 302

ISSUED B. M. GREEY / J. STEARNS CH X1153 SECTION VEHICLE DESIGN INT. GROUP NO. 280 PL 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 39.2 REV 3-66

DWG. NO. LEO280		EO NO. 541
CONTROL INFO NO. LDW280A6132		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17201	SEE DWG	A6
17228		A2
17229		A2
17230		C2
17231		B6
17233		D2
17234		B2
17235		B2
17238		A4
17239		B2
17240		B2
17241		B2
17242		B2
17243		B4
17251		B2
17252		A3
17253		B2
17254		C3
17264		D2
17278		D3
17279		B2
17289		C2
17290		B2
17291		B2
17292		C2
17294		B2
17295		B2
17296		B2
17306		B3
17307		B5
17310		B2
17321		A2
17330		D3
17337		C5
17341		D2
17343		C2
17344		B2
17347		B2
17348		C2
17349		B4
17352		A3
17354		B2
17356		B2
17365		B3
17366	SEE DWG	C2

DETAIL SPEC REQ | | CL II ENGRG CHG | ✓ | CL I ENGRG CHG | | LCD19-1242 | 2 C

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: IN M/B FOR * ADDED LTA-3DR EFF

(R) GAEC EO RELEASE: JK 4/4/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R (46)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: NOT REWORK; REQD SCRAP
PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 541

	APPROVED BY	DATE	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
	[illegible]	3-28-67		3/29/67	3/29/67	3-30-67	3/30/67
SUPPORT	5 YDI						

ISSUED BY G. BECHER/J. STIAKOSCH X1153 SECTION YDI GROUP NO. 335 PL 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 1347
CONTROL INFO NO. LDW280B7395

FOR THE DWGS LISTED BELOW DELETE LM-15(45), EFF FROM ALL DASH NOS. *

DWG NO.	CHANGE NO	DWG NOMENCLATURE
LDW280-17352 ✓	A4	SEE DWG
-17354 ✓	C1	
-17356 ✓	B3	
-17362 ✓	B5	
-17365 ✓	B4	
-17366 ✓	C3	
-17369	A5	
-17375	C1	
-17379	D4	
LDW280-17381	B3	SEE DWG

* APPLICABLE DASH NOS (5)

DETAIL SPEC INCR | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. 10 | CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM —*

EFFECTIVITY: MODEL LM; PROCURING ACTIVITY NO. —; GAEC UNIT NO. LM-15(45); SUB CONTR UNIT NO. —

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO —

DISPOSITION OF PARTS: REWORK —; SCRAP ✓

APPROVED BY / DATE: 4/16/69 VDI; SUPPORT —; RELIAB GROUP —; 4-2-69 GROUP LEADER; 4/8/69 STRESS GROUP; 4/9/69 LIAISON ENGRG; PROJ —

EO RELEASE: 4/16/69

PRIORITY C

DRAWING TITLE: SEE DWG

DRAWING NO. LEO 280

ED REL 1347

DS 2869 ISSUED BY MEVORAH / THORTUSEN X86046 SECTION VEH DES INT GROUP NO. 335 - 25

0.1

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

ENGR. NO. LEO 280 | EO NO. 1636
CONTROL INFO NO. LDW280B8302

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40)
ADD LTA-11 (23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANITY.

DRAWING Nº *	TITLE	CHANGE Nº
LDW280-	SEE DWG	
* 17359		C2
* 17365		B5
* 17366		C4
LDW280-17369	SEE DWG	A7

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG: V | LCD 3890 PKG 99 Pg 88 & 89 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: 8-27-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11(23)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REQ'D | REWORK | SCRAP

APPROVED BY	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
DATE 7-30-69	VDI SUPPORT	8/4/69	8-2-69	N	8/4/69

PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO.: LEO 280
EO NO.: 1636

9/26/69 ISSUED BY G. HANSMANN X87222 (ZF1) SECTION VDI GROUP NO 335 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO 280		EO NO. 1695
CONTROL INFO NO. LDW 280 B8746		

FOR THE DWGS LISTED BELOW DELETE LM-10(40) THRU LM-14(44), LTA-11(23) EFFECTIVITIES FROM ALL DASH NUMBERS* THAT NEXT ASSEMBLE INTO LDW 280-54528

DWG NO (*)	CHANGE NO.	DWG NOMENCLATURE
LDW 280-17182	C3	SEE DWG
LDW 280-17183	B6	↕
LDW 280-17365	B4	
LDW 280-17366	C5	
LDW 280-17369	A8	
LDW 280-17433	C7	
LDW 280-17454	B5	SEE DWG

* APPLICABLE DASH NUMBERS

DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG		LCD 3994 PKG 63 CCA 2333

REASON FOR EO

REDESIGN OF BEAM PANEL FOR H_2O, GOX & MESA SPT. STRUCTURE

DESCRIPTION OF EO

DELETED LM-10(40) THRU LM-14(44) & LTA-11(23) FROM — * FOR N/A LDW 280-54528

GAEC EO RELEASE

MODEL	EFFECTIVITY			DRAWING CHANGE REQD		DISPOSITION OF PARTS		APPROVED BY									
	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	REVISE DWG	RECORD EO	REWORK	SCRAP	DATE									
LM		LM-10(40) THRU		✓			✓	9/12/69				9-22-69	9-22-69	N/A		9/23/69	9/24/69
		LM-14(44)							VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		
		LTA-11(23),		PRIORITY C	DRAWING TITLE: SEE DWG							DRAWING NO.: LEO 280					EO NO. 1695

100369

ISSUED BY TDALY / THORJUSEN X86046 SECTION VEH DES INT GROUP NO. 335 PL 25

01

NAS 9-1100

								LEM	LDW280-28597	LEM-1(31)	1
								LEM	LDW280-28597	LTA-8(18)	1
								LEM	LDW280-25597	LTA-5(15)	1
								LDW280-17368-11			
LEM	LDW280-28570	LEM-1 (31)	3 EA	LEM	LDW280-28570	LEM-1(31)	2 EA	LEM	LDW280-28570	LEM-1(31)	1 EA
LEM	LDW280-28570	LTA-8 (18)	3 EA	LEM	LDW280-28570	LTA-8(18)	2 EA	LEM	LDW280-28570	LTA-8(18)	1 EA
LEM	LDW280-25570	LTA-5(15)	3 EA	LEM	LDW280-25570	LTA-5(15)	2 EA	LEM	LDW280-25570	LTA-5(15)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17368-19 & -20		GAEC SCH NO.		PART NO. LDW280-17368-17 & -18		GAEC SCH NO.		PART NO. LDW280-17368-13 & -15		GAEC SCH NO. 50-3 51-4	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00		2.00	3.00					
REV									
SHEET									
REV									
SHEET									
REV									

		GRUMMAN REL INFO	
LAST SECT LTR USED		PRIM NO.	(6000)
LAST DASH NO. USED	-20	207	PP12X

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ± .020 ± 1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100 | LINE ITEM | | DOCUMENTATION TYPE II

DRAWN BY	J. COBB 11-4-65	RELIABILITY		
LAYOUT BY	J. ROGERS			
CHECKED BY	J E 11-17-65			
GR LEADER				
VEH DES INT				
STRUCTURE	11/16/66	PROJ ENGR		
STRUCTURE	1-19	REL GROUP		
WEIGHTS				

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER
DESCENT STAGE-ERA SPT
LATERAL-INTERCOSTAL BACKUP

SIZE	CODE IDENT NO.	
B	26512	LDW280-17368

SCALE NONE | SHEET 1.000F 3

ENG 77.1 9-64

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17368-20	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.050 X 2 7/8 X 6	T6	88	
		-19					7075	.050 X 2 7/8 X 6	T6	88	
		-18					7075	.050 X 3 X 6	T6	88	
		-17		STIFFENER			7075	.050 X 3 X 6	T6	88	
		-15		FILLER			7075-T6	.100 X 1 3/8 X 2 7/8	NONE	88	
		-13		FILLER			7075-T6	.020 X 1 1/2 X 1 3/8	NONE	88	
		LDW280-17368-11	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.050 X 1 7/8 X 5 3/4	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17368

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

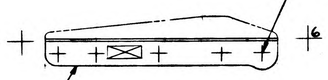
NAS 9-1100

LDW280-17368 4 TRAM D.7

NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. ALL ABBREVIATIONS AS PER MIL-STD 12 EXCEPT AS FOLLOWS:
E.R.A. = ELECTRONIC REPLACEABLE ASSY.

25
20

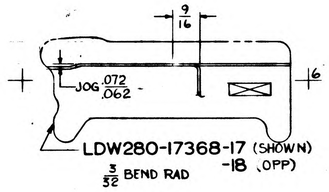
DRILL #40 (.097-.102) 5 HOLES.



LDW280-17368-11
3/32 BEND RAD

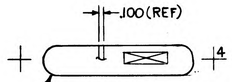
.020 (REF)

LDW280-17368-13

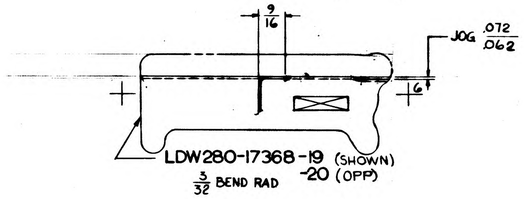


LDW280-17368-17 (SHOWN)
-18 (OPP)
3/32 BEND RAD

.100 (REF)



LDW280-17368-15



LDW280-17368-19 (SHOWN)
-20 (OPP)
3/32 BEND RAD

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

- RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY. ✓
- FILLET AND INSIDE CORNER RADII TOLERANCES .010R TO .062R ± .010; .063R TO .250R ± .015; OVER .250R ± .030
- DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE
- EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.
- DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.
- MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.
- DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING
- HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.
- ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES
- 125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10
- 200 FOR ALL DRILLED HOLES
- REMOVE ALL BURRS. BREAK ALL EDGES .015-.031
- INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS
- SYMBOL ✓ DENOTES SURFACE TO BE MACHINED
- UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32
- LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED
- TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32 ✓

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	LDW280-17368
D	26512	

LEM | MODEL OR END ITEM | SCALE FULL | SHEET 3.00

2 FOR PHOTO REPRODUCTION 1 K2

LDW280-17368

01 NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.	GAEC SCH NO.		
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.	GAEC SCH NO.		
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17369-11,-13,-15	GAEC SCH NO. 51-4		
LEM	LDW280-28528	LTA-8	1 EA
LEM	LDW280-25528	LTA-5	1 EA
LEM	LDW280-23529	LTA-3	1 EA
LEM	LDW280-52528	LEM-6	1 EA
LEM	LDW280-52528	LEM-5	1 EA
LEM	LDW280-52529	LEM-4	1 EA
LEM	LDW280-52528	LEM-3	1 EA
LEM	LDW280-52528	LEM-2	1 EA
LEM	LDW280-28528	LEM-1	1 EA

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00		2.00		3.00					
REV										
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	~
LAST DASH NO. USED	-15

GRUMMAN RELEASE INFO

PRIM NO.	(2001)
207	#12

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS — DECIMALS — ANGLES
± 1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100			LINE ITEM 1	DOCUMENTATION TYPE II
DRAWN BY	M.COLEMAN LOEW 11/24/65			GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK
LAYOUT BY	R. QUEVEDO 11/19/65			STIFFENER
CHECKED BY	EJR 12-2-65			DESCENT STAGE-R.H. FWD. BEAM PANEL, OUTBD UPPER
GROUP LDR.	[signature] 12/7/65			
VEH. DES. INT.	[signature] 12/7/65			
STRUCTURES	[signature] 12/13/65			SIZE B | CODE IDENT NO. 26512 | LDW280-17369
STRUCTURES	[signature] 12-13	PROJ ENGR	[signature] 12-20-65	SCALE NONE | SHEET 1.00 OF 3.00
WEIGHTS	[signature] 12/16	RELEASE	[signature] 12-21-65	

ENG 77.1 9-64

SMR

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17369-15		STIFFENER	AL ALLOY SH	QQ-A-283	7075	.063×1 7/8×10 3/4	T6	88	7A
		LDW280-17369-13		STIFFENER	AL ALLOY SH	QQ-A-283	7075	.063×1 7/8×10 1/2	T6	88	4C
		LDW280-17369-11		STIFFENER	AL ALLOY SH	QQ-A-283	7075	.063×1 7/8×5	T6	88	3A

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP 14-9030

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17369

SCALE NONE SHEET 2

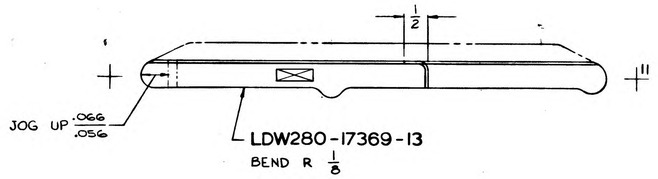
ENG 77.2 7-65

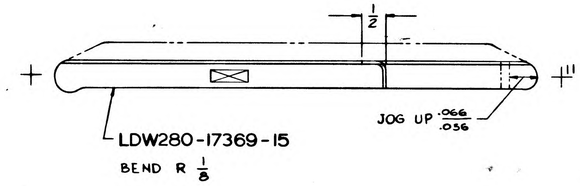
01

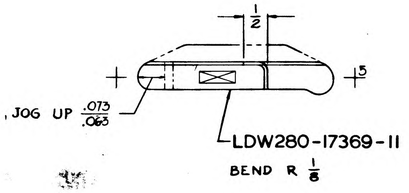
NAS 9-1100

LDW 280-17369

NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.







MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ~~USE BOTH SIDES IF NECESSARY~~	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010; .063R TO .250R ± .015; OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

LDW 280-17369

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK		
	SIZE	CODE IDENT NO.	LDW 280-17369
LEM	D	26512	
MODEL OR END ITEM	SCALE FULL		SHEET 3.00

8 7 6 5 4 3 2 1 — FOR PHOTOREPRODUCTION — K1

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 125

CONTROL INFO NO. LDW 280-6876

FOR THE NOTED PART NOS. REVISE M/B AS FOLLOWS:

NOW: N/A LDW 280-54528 EFF: LEM-4(34), LEM-5(35), LEM-6(36)
N/A LDW 280-52528 EFF: LEM-2(32), LEM-3(33)
N/A LDW 280-23528 EFF: LTA-3(13)

WAS: N/A LDW 280-23528 EFF: LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35), LEM-6(36)

PART NO*	CHG NO	PART NO*	CHG NO
✓LDW280-17183-23	B1	✓LDW280-17612-15,17	A2
✓LDW280-17365-21,23,25,27,29	B1	LDW280M17109-6	C2
✓LDW280-17366-21,23,25	B2	LDW280M17416-4	B3
✓LDW280-17369-11,13,15	A1	LDW280M17420-1	A1
✓LDW280-17604-11,13	A1		
✓LDW280-17605-11,13	A1		

ALL OTHER NEXT ASS'Y. & EFF. REMAIN UNCHANGED

2

DETAIL SPEC REQ | CL II ENGRG CHG | ✓ CL I ENGRG CHG

REASON FOR EO: WEIGHT CONTROL REQUIREMENTS

DESCRIPTION OF EO: REVISED M/B ON PART NO* WAS: N/A LDW 280-23528 EFF: LTA-3(13), LEM-2(32), LEM-3(33), LEM-4(34), LEM-5(35), LEM-6(36)

GAEC EO RELEASE: C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-4(34)	
		LEM-5(35)	
		LEM-6(36)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO

DISPOSITION OF PARTS: NOT REQ'D | REWORK | SCRAP

PRIORITY: C

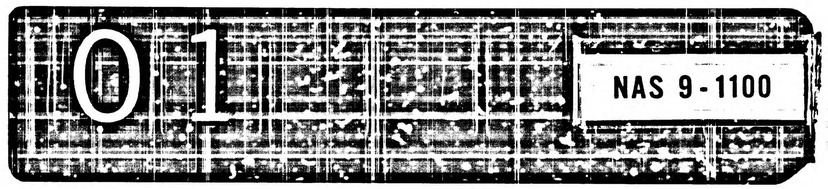
DRAWING TITLE: SEE DWGS

DRAWING NO.: LEO 280

EO NO.: 125

APPROVED BY									
DATE	5/26/66	5/27							6-6-66
	VDI	SUPPORT A.E.E.	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	CHIEF ENGR	

ISSUED BY G. BECKER/J. STRAKOSCH X1153 SECTION VEH. DESIGN INT GROUP NO. 335 PL 35



GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-66

DWG. NO. LEO280 | ED NO. 308
CONTROL INFO NO. LDW280A1001

TO THE FOLLOWING DRAWINGS LISTED, BELOW AND THEIR DASH NUMBERS THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-17344	B1	SEE DRAWING
-17347	B1	
-17348	C1	
-17349	B3	
-17352	A2	
-17354	B1	
-17356	B1	
-17365	B2	
-17366	C1	
-17369	A2	
-17379	C1	
-17380	B1	
-17381	B1	
-17382	A1	
-17383	A1	
-17384	B2	
-17385	C1	
-17388	D??	
-17393	B2	
-17395	C?	
-17397	B1	
-17398	B1	
-17399	C1	
-17400	B3	
-17412	B1	
-17413	C1	
-17414	B2	
-17415	B1	
-17416	B1	
-17417	B1	
-17418	B1	
-17419	B1	
LDW280-17420	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
			ADDITIONAL REQUIREMENTS	FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.	FR 10/13/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
LEM		LEM-7(37), LEM-8(38), LEM-9(39)	LEM-7(37)			NOT REQ'D			10/15/66				10/15/66		11-11-66
LEM		LEM-10(40), LEM-11(41), LEM-12(42)	LEM-12(42)			NOT REQ'D			10/15/66				10/15/66		11-11-66
LEM		LEM-13(43), LEM-14(44), LEM-15(45)	LEM-14(44), LEM-15(45)			NOT REQ'D			10/15/66				10/15/66		11-11-66

PP	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LEO280	308

ISSUED BY M. GREY / J. STRAKOSCH X1153 SECTION VEHICLE DESIGN INT. GROUP NO. 280 PL 35

NAS 9-1100

ENG 22.2 REV 2-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280		EO NO. 546
CONTROL INFO NO. LDW280A6133		

FOR ALL DASH NO.* ON THE FOLLOWING DWGS WHICH HAVE LM-6 EFF ADD LTA-3D/R EFF QTY & N/A TO REMAIN THE SAME AS ON LM-6

DRAWING *	TITLE	CHANGE NO.
LDW280-17369	SEE DWG	A4
-17395		C6
-17398		B2
-17399		C2
-17412		B2
-17413		C2
-17419		B2
-17429		C1
-17430		B2
-17431		B3
-17432		A2
-17433		C4
-17434		B2
-17437		A5
-17438		A2
-17439		B2
-17440		B2
-17442		B2
-17444		B5
-17445		B3
-17447		B2
-17448		B2
-17454		B2
-17600		B3
-17601		B2
-17602		B2
-17603		C1
-17604		A3
-17605		A3
-17606		B3
-17607		A4
-17608		C3
-17609		C1
-17610		C1
M17687		A3
M17700		B2
M17174		C1
	SEE DWG	

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | LCO19-1242 | 2/62 C

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: FOR * ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 3/14/62

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3D/R (46)	

DRAWING CHANGE REQD: REVISE DWG: / ; RECORD EO:
DISPOSITION OF P/P'S: NOT REWORK; REQD SCRAP
APPROVED BY: 5
DATE: 3/22/62
YDI | SUPPORT | RELIAB GROUP | GROUP LEADER 3/14/62 | STRESS GROUP 3/14/62 | LIAISON ENGRG W/H | PROJ ENGRG 3-30-62 | 4/4/62
PRIORITY: C
DRAWING TITLE: NOTED
DRAWING NO.: LEO280
EO NO.: 546

ISSUED BY: STEA/STRAICOSCH X156 SECTION: YDI GROUP NO.: 335 PL: 25

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 1347
CONTROL INFO NO. LDW280B7395

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.		CHANGE NO	DWG NOMENCLATURE
LDW280-17352	✓	A4	SEE DWG
-17354	✓	C1	
-17356	✓	B3	
-17362	✓	B5	
-17365	✓	B4	
-17366	✓	C3	
-17369	✓	A5	
-17375		C1	
-17379		D4	
LDW280-17381		B3	SEE DWG

* APPLICABLE DASH NOS (5)

DETAIL SPEC REQ | CL II ENGNG CHG | CL I ENGNG CHG | ✓ LCD 3587 PKG 50 PG. 10 CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM *

GAEC ✓ EO RELEASE: 4/16/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	—	LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK | SCRAP ✓

APPROVED BY: DATE 4/16/69 VDI; RSP 4-2-69; WTH 4/9/69; GAP 4/16/69; 4/16/69

SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG | EO NO. 1347

PRIORITY: C

DRAWING TITLE: SEE DWG

DRAWING NO.: LEO 280

05 2869 ISSUED BY MEVORAH / THORTJSEN X86046 SECTION VEH DES INT GROUP NO. 335-25

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NAS 9-1100

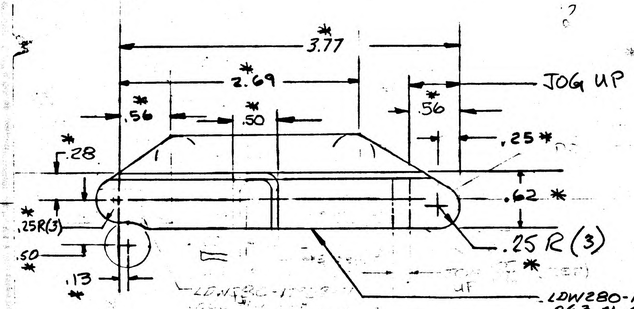
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LDW280-17369 | EO NO. A6
CONTROL INFO NO. LDW280B8315

CREATE-19 IREQ'D/MOD N/A LDW280-54528
EFF LM-10(40) THRU LM-14(44), LTA-11(23) & LTA-3 DR/1(460)
RESTRICT-11 TO LTA-5(15), LTA-8(18), LTA-3(13), LTA-3 DR(46), LM-1(31) THRU LM-9(39) WAS
LTA-5(15), LTA-8(18), LTA-3(13), LTA-3DR(46), LTA [illegible] & LM-1(31) THRU LM-14(44)



* DIMS. FOR LOFTING REF ONLY.

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LCD 3890 PKG 97

REASON FOR EO: MODIFICATION FOR LARGER PROPELLANT TANKS

DESCRIPTION OF EO: FOR-11, REMOVED LM-10(40) THRU LM-14(44), LTA EFF WAS LTA-5(15), LTA-8(18), LTA-3 DR(46), LTA-3(13) AND LM-1(31) THRU LM-14(44) & LTA [illegible] (23). ADDED-19.

GAEC EO RELEASE: 8-22-69; 8-23-69

MODEL	PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	SUB-CONTR UNIT NO.
LM		LM-10(40) THRU LM-14(44)	
		LTA-11(23)	
		LTA-3 DR/1 (460)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: REWORK; SCRAP -11
PRIORITY: C
DRAWING TITLE: STIFFENER D/S END BEAM PANEL OUTB'D - UPPER
DRAWING NO.: LDW280-17369
EO NO.: A6

APPROVED BY								
DATE	8/15/69			9/15/69				
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

9-8-69
ISSUED BY M. SHAPIRO X86096 SECTION VDI GROUP NO. 335 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

SPEC. NO. LEO 280 | EO NO. 1636

CONTROL INFO NO. LDW280B8302

FOR ALL PART NUMBERS EFFECTIVE ON LM-10(40)
ADD LTA-11(23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANITY.

	DRAWING Nº *	TITLE	CHANGE Nº
	LDW280-	SEE DWG	
*	17354		C2
*	17365		B5
*	17366		C4
*	LDW280-17369	SEE DWG	A7

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG 99 Pg 88 & 89 (5)

REASON FOR EO
NEW DYNAMIC TEST VEHICLE REQ'D FOREXTENDED TANKS

DESCRIPTION OF EO
ON * ADDED LTA-11(23) REQMTS

GAEC EO RELEASE: 8/18 8-21-69; VK 8/21/69; [illegible] 8/26/69; [illegible] 8/26/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LTA-11(23)	

DRAWING CHANGE REQD: ✓ REVISE DWG; RECORD EO
DISPOSITION OF PARTS: NOT REQ'D; REWORK; SCRAP

APPROVED BY								
DATE	7-30-69				7/31/69	8-7-69		
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO.: LEO 280
EO NO.: 1636

9-26-69
ISSUED BY G. HANSMANN X87222 (EFI) SECTION VDI GROUP NO 335 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO 280		EO NO. 1695
CONTROL INFO NO. LDW 280 38746		

FOR THE DWGS LISTED BELOW DELETE LM-10(40) THRU LM-14(44), LTA-11(23) EFFECTIVITIES FROM ALL DASH NUMBERS* THAT NEXT ASSEMBLE INTO LDW 280-54528

DWG NO (*)	CHANGE NO.	DWG NOMENCLATURE
LDW 280-17182	C3	SEE DWG
LDW 280-17183	B6	↕
LDW 280-17365	B4	
LDW 280-17366	C5	
LDW 280-17369	A8	
LDW 280-17433	C7	
LDW 280-17454	B5	SEE DWG

* APPLICABLE DASH NUMBERS

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	
			V

LCD 3994 PKG 63 CCA 2333 (5)

REASON FOR EO

REDESIGN OF BEAM PANEL FOR H2O, GOX & MESA SPT. STRUCTURE

DESCRIPTION OF EO

DELETED LM-10(40) THRU LM-14(44) & LTA-11(23) FROM — * FOR N/A LDW 280-54528

GAEC EO RELEASE: VK 9/3/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10(40) THRU	
		LM-14(44)	
		LTA-11(23), "	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
✓			✓

APPROVED BY								
DATE	9/2/69	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER 9-22-69	STRESS GROUP 9/23/69	LIAISON ENGRG	PROJ ENGRG 9/23/69

PRIORITY: C

DRAWING TITLE: SEE DWG

DRAWING NO.: LEO 280

EO NO.: 1695

100360

ISSUED BY TDALY / THORJUSEN X86046 SECTION VEH DES INT GROUP NO. 335 PL 25

01

NAS 9-1100

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LEM	LDW280-28570	LEM-1(31)	1 EA
LEM	LDW280-28570	LTA-8 (18)	1 EA
LEM	LDW280-25570	LTA-5 (15)	1 EA
PART NO. LDW280-17370-11,-13,-14,-15,-16, -17,-19		GAEC SCH NO. 51-4	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00		2.00		3.00					
REV										
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED		GRUMMAN REL INFO
LAST DASH NO. USED	-19	PRIM NO. (C1001) 207 AP12

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100 LINE ITEM # 1 DOCUMENTATION TYPE II

DRAWN BY	L.BRIDA 11-10-65	RELIABILITY	—
LAYOUT BY	J.J. ROGERS JR.		
CHECKED BY	WCG 11/15/65		
GR LEADER	[signature] 12/2/65		
VEH DES INT	[signature] 12/10		
STRUCTURES	[signature] 1/11/66	PROJ ENGR	[signature] 1/26
STRUCTURES	[signature] 1-19	REL GROUP	Peppercorn 1/28/66
WEIGHTS	[signature] 1/24/66		

(R) GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER
DESCENT STAGE~E.R.A. SUPPORT~
LATERAL

SIZE	CODE IDENT NO.	
B	26512	LDW280-17370

SCALE NONE SHEET 1.00 OF 3

ENG 77.1 9-64

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17370-19	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.050 x 3 x 6 1/8	T6	88	
		-17						.050 x 2 1/2 x 6 1/8			
		-16						.050 X 3 x 6 1/8			
		-15						.050 X 3 x 6 1/8			
		-14						.050 x 2 1/2 x 6 1/8			
		-13						.050 x 2 1/2 x 6 1/8			
		LDW280-17370-11	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.040 x 2 x 6 1/8	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17370

SCALE NONE SHEET 2.00

ENG 77.2 7-65

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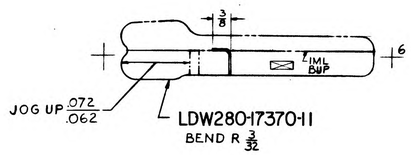
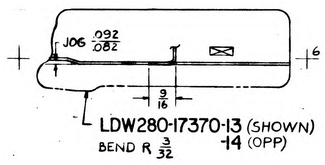
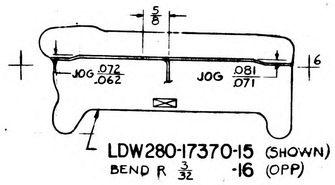
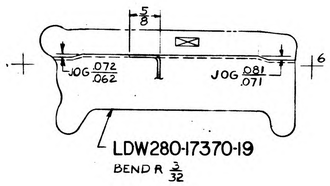
NAS 9-1100

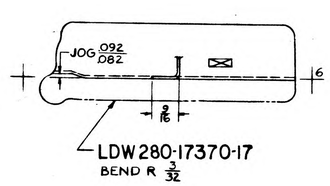
LDW280173701

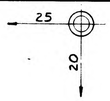












NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS
2. ALL ABBREVIATIONS ARE PER MIL-STD-12 EXCEPT AS FOLLOWS: E.R.A.(ELECTRONIC REPLACEABLE ASSEMBLY).

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .015R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL X DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, MS & NS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK		
L.E.M.	SIZE D	CODE IDENT NO. 26512	LDW280-17370
MODEL OR END ITEM	SCALE FULL		SHEET 3.00

LDW280-17370

FOR PHOTO REPRODUCTION

K3

Q1 NAS 9-1100

LEM	LDW280-28570	LEM-1(31)	3EA	LEM	LDW280-28570	LEM-1(31)	1EA	LEM	LDW280-28570	LEM-1(31)	2EA
LEM	LDW280-28570	LTA-8(18)	3EA	LEM	LDW280-28570	LTA-8(18)	1EA	LEM	LDW280-28570	LTA-8(18)	2EA
LEM	LDW280-25570	LTA-5(15)	3EA	LEM	LDW280-25570	LTA-5(15)	1EA	LEM	LDW280-25570	LTA-5(15)	2EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17371-15 & -17		GAEC SCH NO.		PART NO. LDW280-17371-19 & -20		GAEC SCH NO.		PART NO. LDW280-17371-11, -13, -16 & -18		GAEC SCH NO. 51-5	(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1		2	3						
REV										
SHEET										
REV										
SHEET										
REV										

		GRUMMAN REL INFO			
LAST SECT LTR USED		PRIM NO.	4E(001)		
LAST DASH NO. USED	-20	207	PP12		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100 | LINE ITEM 1 | DOCUMENTATION TYPE II

DRAWN BY	V. NARONIS 11-9-65	RELIABILITY	
LAYOUT BY	J. ROGERS		
CHECKED BY	WCG 11/13/65		
GP. LEADER			
VEH. DES. INT.			
STRUCTURES		PROJ ENGR	
STRUCTURES		REL GROUP	1-13-66
WEIGHTS			

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER
DESCENT STAGE-E.R.A. SUPPORT
LATERAL-INBD PANEL BREAKER

SIZE B | CODE IDENT NO. 26512 | LDW280-17371

SCALE NONE | SHEET 1 OF 3

NG 77.1 9-64

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17371-20	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.040x15/8x67/8	T6	88	
		-19						.040x15/8x67/8	T6	88	
		-18						.050x15/8x6	T6	88	
		-17						.050x15/8x6	T6	88	
		-16						.050x15/8x6	T6	88	
		-15						.050x15/8X 6	T6	88	
		-13						.050x23/8X6	T6	88	
		LDW280-17371-11	E	STIFFENER	AL ALLOY SH	QQ-A-283	7075	.050x23/8x6	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP14-9030
T6	AL HEAT TREAT	MIL-H-6088

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : E

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17371

SCALE NONE SHEET 2

ENG 77.2 7-65

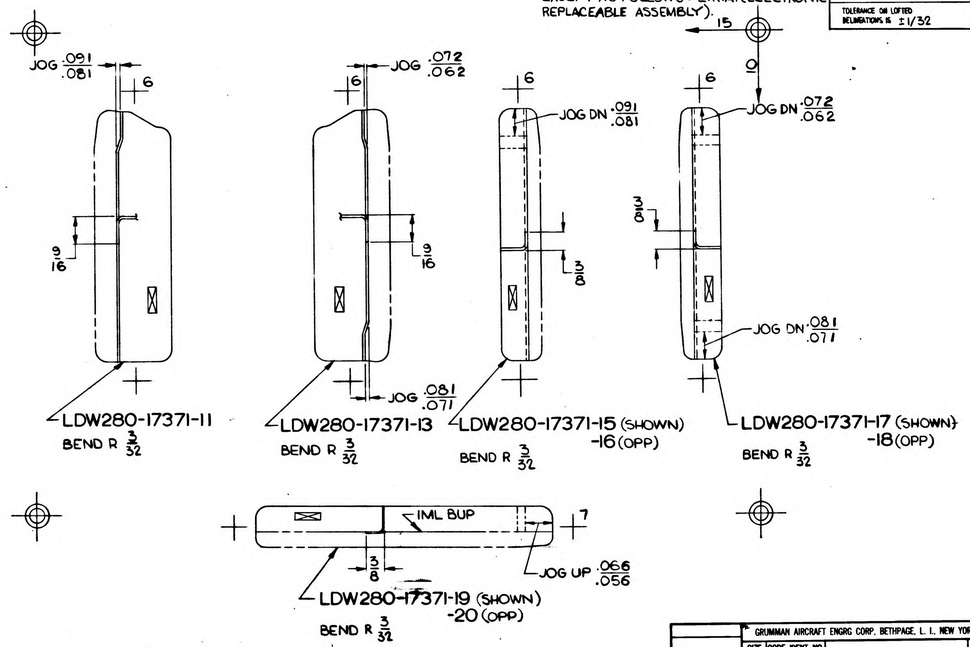
01

NAS 9-1100

NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. ALL ABBREVIATIONS ARE PER MIL-STD-12 EXCEPT AS FOLLOWS: E.R.A. (ELECTRONIC REPLACEABLE ASSEMBLY).

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	✓
TOLERANCE ON LOFTED DELINEATIONS IS ±1/32	✓



GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
C	26512	LDW280-17371

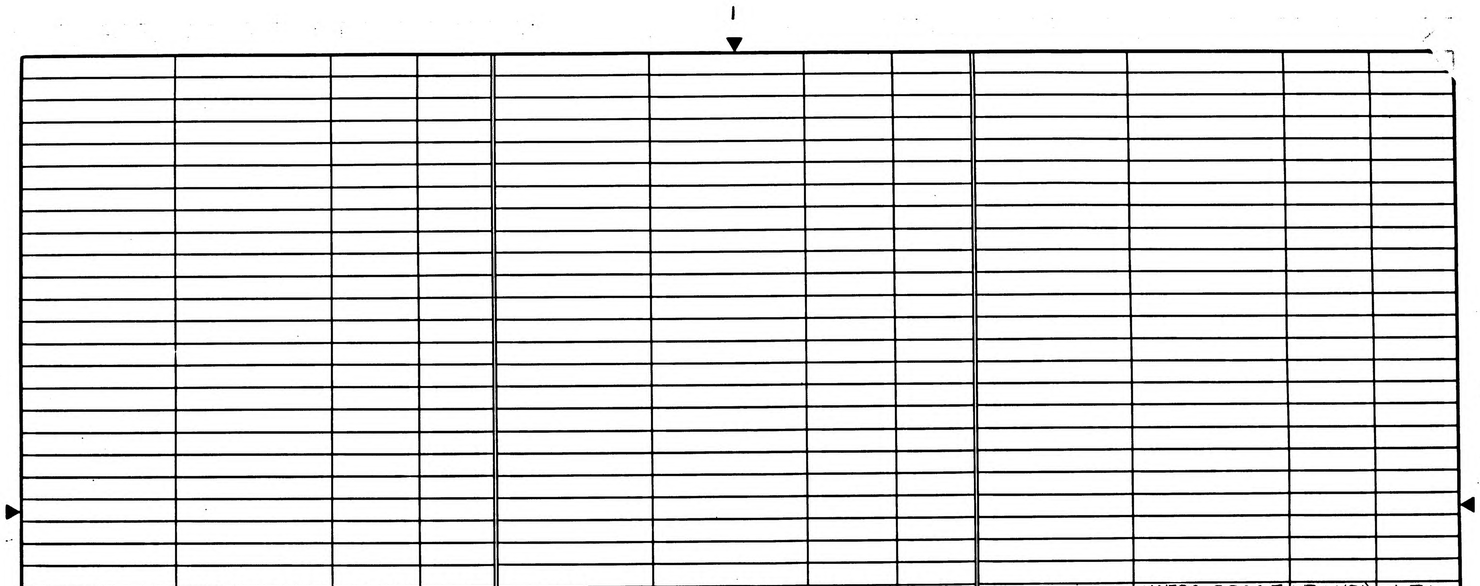
LEM | MODEL OR END ITEM | SCALE FULL | SHEET 3

FOR PHOTO REPRODUCTION

LDW280-17371 B

0.1

NAS 9-1100



LEM	LDW280-28570	LEM-1(31)	2 EA.	LEM	LDW280-28570	LEM-1(31)	1 EA	LEM	LDW390-28065	LEM-1(31)	1 EA
LEM	LDW280-28570	LTA-8(18)	2 EA.	LEM	LDW280-28570	LTA-8(18)	1 EA	LEM	LDW390-28065	LTA-8(18)	1 EA
LEM	LDW280-25570	LTA-5(15)	2 EA.	LEM	LDW280-25570	LTA-5(15)	1 EA	LEM	LDW390-25065	LTA-5(15)	1 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17372-11,-12		GAEC SCH NO. 51-5		PART NO. LDW280-17372-13,-14		GAEC SCH NO. 51-5		PART NO. LDW280-17372-15, -17, ¢-19		GAEC SCH NO. 43	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10	2.00		3.00				
REV	A	A			A				
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED		GRUMMAN REL INFO	PRIM NO. (001)
LAST DASH NO. USED	-19		207 PIV

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS9-1100 | LINE ITEM # 1 | DOCUMENTATION TYPE II

DRAWN BY	HERB. SCHWETER 11/3/65	RELIABILITY	
LAYOUT BY	J.J. ROGERS 11/3/65		
CHECKED BY	J.S. 11-15-65		
GR LEADER	[signature] 11/3/65		
VEH DES INT	[signature] W. BISCHOFF 11/3/65		
STRUCTURES	[signature] 11/4 [signature] 1/10/66	PROJ ENGR	[signature] 1/4
STRUCTURES	[signature] HILDE Brown 1/10/66	REL GROUP	[signature] 1/7/66
WEIGHTS	[signature] 1/10/66		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STIFFENER
DESCENT STAGE~ERA. SUPPORT~
LATERAL~OUTBD PANEL BREAKERS

SIZE	CODE IDENT NO.	
B	26512	LDW280-17372 A

SCALE NONE | SHEET 1.00 OF 4

ENG 77.1 9-64

SNIP

01 NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.00, 1.10 & 3						EO-A1	TRIMMED -13 & -14. ADDED SHEET 1.10. SHEET 1.00 OF 4 WAS 1 OF 3	LTA-5 & -8 LEM-1	✓		JESAITIS 8-22-66	X	X

CHG APPROVED

LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS
A					

ENG 77.16 3-66

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

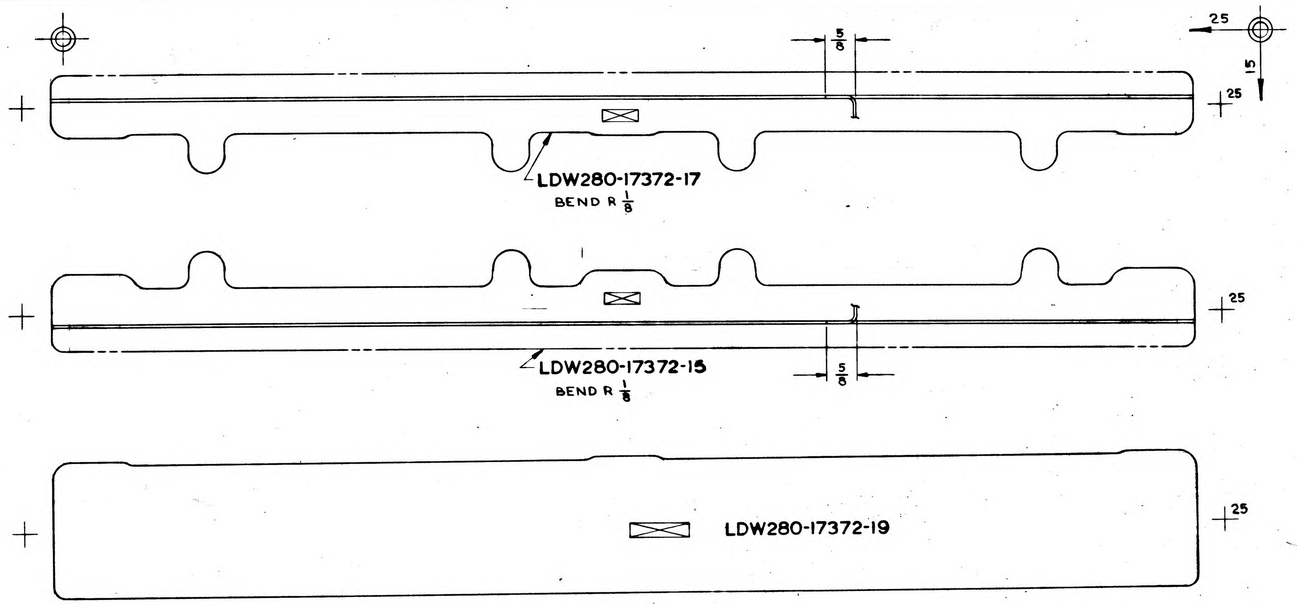
SIZE	CODE IDENT NO.		
B	26512	LDW280-17372	A

SCALE NONE SHEET 1.10

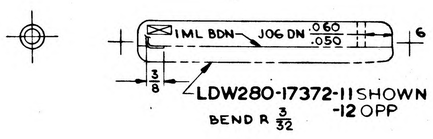
01

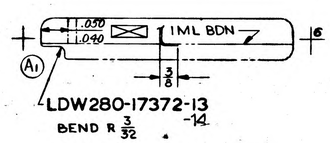
NAS 9-1100

LDW280-17372 A



NOTE:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. ALL ABBREVIATIONS ARE PER MIL-STD-12 EXCEPT AS FOLLOWS E.R.A. (ELECTRONIC REPLACEABLE ASSY).





MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .015R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED ⌀ MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE WET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
700 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL X DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK			
	SIZE	CODE IDENT NO.		
LEM	D	26512	LDW280-17372	A
MODEL OR END ITEM	SCALE FULL		SHEET 3	

FOR PHOTO REPRODUCTION

LDW280-17372 A

01 NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17372-19	E	WEB	AL ALY SH	QQ-A-250/12	7075 T6	.020×3 5/8×24 5/8	NONE	88	
17				ANGLE			7075	.063×2 7/8×24 5/8	T6		
15				ANGLE				.063×2 7/8×24 5/8			
14				STIFFENER				.040×1 5/8×6 1/8			
13				STIFFENER				.040×1 5/8×6 1/8			
12				STIFFENER				.040×1 5/8×6 1/8			
		LDW280-17372-11	E	STIFFENER	AL ALY SH	QQ-A-250/12	7075	.040×1 5/8×6 1/8	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17372

SCALE NONE SHEET 2

ENG 77.2 7-65

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-17372 | EO NO. B1
CONTROL INFO NO. LDW280B1222

IN MB ON -15, -17 & 19 N/A LDW390-10211
(WAS) LDW390-28065 1 REQ'D PER MOD.

DETAIL SPEC REQ | ✓ CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: TO AGREE WITH CDR LIST (CDR LIST)

DESCRIPTION OF EO: IN MB ON -15, -17 & -19 N/A LDW390-10211 (WAS) LDW390-28065 1 REQ'D PER MOD.

GAEC EO RELEASE

EFFECTIVITY			
MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQ'D	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: NOT REQ'D REWORK | SCRAP

APPROVED BY								
DATE		VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG
					1-12-68			

PRIORITY: E

DRAWING TITLE: STIFFENER-DIS-ERA SUPPORT-LATERAL-OUTBD PANEL BREAKERS

DRAWING NO.: LDW280-17372

EO NO.: B1

ISSUED BY D. SHAPIRO/P. THORJUSEN x-1153 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17373-20	E	STIFFENER	AL ALY SH	QQ-A-283	7075	.040 x 2 x 6	T6	88	
		-19						.040 x 2 x 6			
		-18						.050 x 1 5/8 x 6			
		-17						.050 x 1 5/8 x 6			
		-16						.050 x 2 3/8 x 6			
		-15						.050 x 2 3/8 x 6			
		-13						.050 x 1 3/4 x 5 5/8			
		LDW280-17373-11	E	STIFFENER	AL ALY SH	QQ-A-283	7075	.050 x 1 3/4 x 5 3/4	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	
B	26512	LDW280-17373

SCALE NONE SHEET 2.00

ENG 77.2 7-65

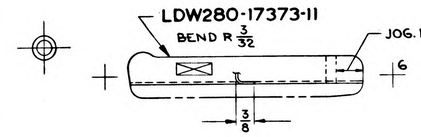
01

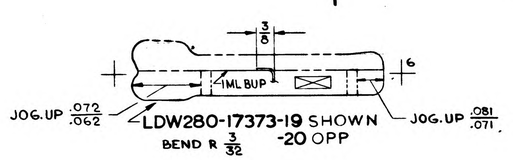
NAS 9-1100

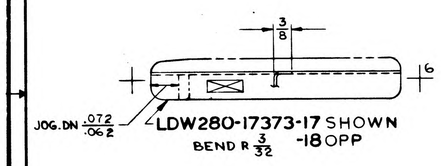
NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. ALL ABREVIATIONS ARE PER MIL-STD-12 EXCEPT AS FOLLOWS
E.R.A.(ELECTRONIC REPLACEABLE ASSY).

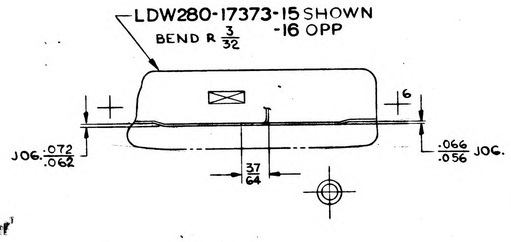
MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

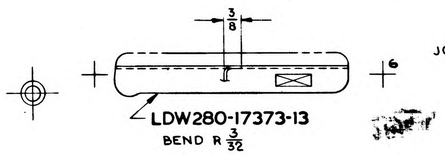
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ☒	✓
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓











	GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK		
LEM	SIZE C	CODE IDENT NO. 26512	LDW280-17373
MODEL OR END ITEM	SCALE FULL		SHEET 3.00

FOR PHOTO REPRODUCTION

LDW280-17373 REV D

01 NAS 9-1100

LEM	LDW280-28570	LEM-1(13)	1 EA	LEM	LDW280-28570	LEM-1(31)	1 EA	LEM	LDW280-28570	LEM-1(31)	2 EA
LEM	LDW280-28570	LTA8-(18)	1 EA	LEM	LDW280-28570	LTA-8(18)	1 EA	LEM	LDW280-28570	LTA-8(18)	2 EA
LEM	LDW280-25570	LTA5(15)	1 EA	LEM	LDW280-25570	LTA-5(15)	1 EA	LEM	LDW280-25570	LTA-5(15)	2 EA
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM	MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17374-16				PART NO. LDW280-17374-13, -14, -15, -17 & -19				PART NO. LDW280-17374-11 & -12		51-4	

(2)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00	1.10	2.00	3.00						
REV	A	A								
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED		GRUMMAN REL INFO A	
LAST DASH NO. USED	-19	PRIM NO.	(E1001)
		207	PPA MPSAX

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100		LINE ITEM # 1		DOCUMENTATION TYPE II
DRAWN BY	HERB. SCHWETER 11/9/65	RELIABILITY		GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK
LAYOUT BY	J. ROGERS			STIFFENER DESCENT STAGE ~ E.R.A. SUPPORT ~ MID INTERCOSTAL BACKUP
CHECKED BY	WCG 1/10/66			
GR LEADER				
NEW DES INT				
STRUCTURES	WCG 11/15/66	PROJ ENGR		SIZE B | CODE IDENT NO. 26512 | LDW280-17374 | A
STRUCTURES		REL GROUP		SCALE NONE | SHEET 1.00 OF 4
WEIGHTS	W. G. Hawkins 1/10/66			

ENG 77.1 9-64

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
A	1	1.1.10						EO A1	IN MOD. BLK. ADDED-16 (SH. 10F4 WAS SH. 10F3 ADDED SH. 1.10)	LEM-16 LTA-5 & UP	NOT	REQD	DAVELLA 2-14-66		

FOR CONTINUATION OF REVISIONS SEE SHEET _____

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17374	A

SCALE NONE — SHEET 1.10

ENG 77.3 5-65

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC *	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17374-19	E	STIFFENER	AL ALY SH	QQ-A-283	7075	.063X2 1/8X5 1/8	T6	88	
		-17						.063X2 X 5 1/8			
		-16						.050 X 3 X 6			
		-15						.050 X 3 X 6			
		-14						.050 X 2 1/2 X 6			
		-13						.050 X 2 1/2 X 6			
		-12						.050 X 3 X 6			
		LDW280-17374-11	E	STIFFENER	AL ALY SH	QQ-A-283	7075	.050 X 3 X 6	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

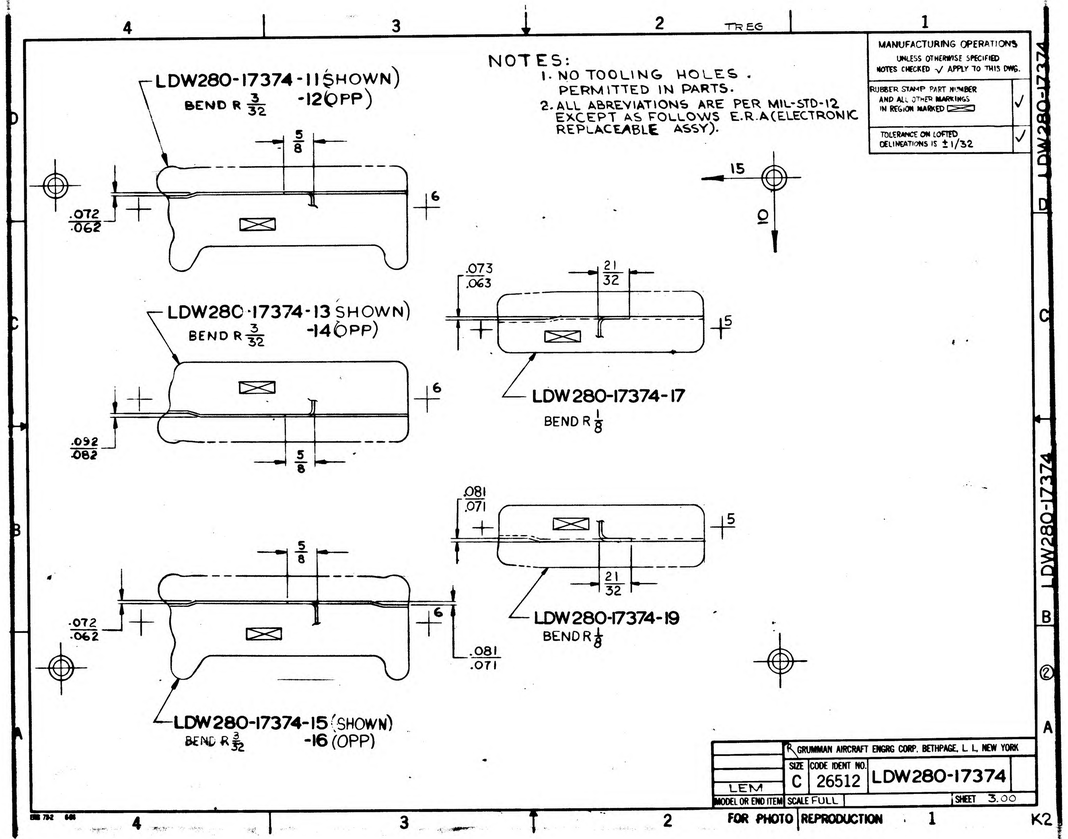
SIZE	CODE IDENT NO.	
B	26512	LDW280-17374

SCALE NONE SHEET 2.00

ENG 77.2 7-65

01

NAS 9-1100



NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.
2. ALL ABREVIATIONS ARE PER MIL-STD-12 EXCEPT AS FOLLOWS E.R.A(ELECTRONIC REPLACEABLE ASSY).

MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED	√
TOLERANCE ON LOFTED DELINEATIONS IS ±1/32	√

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.	LDW280-17374
C	26512	

LEM — MODEL OR END ITEM — SCALE FULL — SHEET 3.00

LDW280-17374 REV

FOR PHOTO REPRODUCTION

01 NAS 9-1100

LM	LDW280-28528	LTA-8 (18)	2
LM	LDW280-25528	LTA-5(15)	2
LM	LDW280-23528	LM-1(31)	2
LDW280-17375-19			
LM	LDW280-25581	LM-3(33)	1
LM	LDW280-25581	LM-2(32)	1
LM	LDW280-25581	LM-1(31)	1
LDW280-17375-21			
LM	LDW280-23581	LM-15(45)	1 EA
		LM-14(44)	
		LM-13(43)	
		LM-12(42)	
		LM-11(41)	
		LM-10(40)	
		LM-9(39)	
		LM-8(38)	
		LM-7(37)	
		LM-6(36)	
LM	LDW280-23581	LTA-3(13)	1 EA

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17375-23&-24			

LM	LDW280-25581	LTA-8(18)	1
LM	LDW280-25581	LTA-5(15)	1
LDW280-17375-17			
LM	LDW280-23581	LTA-3DR(16)	1 EA
		LTA-3(13)	
		LM-15(45)	
		LM-14(44)	
		LM-13(43)	
		LM-12(42)	
		LM-11(41)	
		LM-10(40)	
		LM-9(39)	
		LM-8(38)	
		LM-7(37)	
		LM-6(36)	
		LM-5(35)	
	LDW280-23581	LM-4(34)	
	LDW280-25581	LM-3(33)	
	LDW280-25581	LM-2(32)	
	LDW280-25581	LM-1(31)	
	LDW280-25581	LTA-8(18)	
LM	LDW280-25581	LTA-5(15)	1 EA

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17375-13			

LM	LDW280-25581	LEM-3(33)	1 EA
	LDW280-25581	LEM-2(32)	1 EA
	LDW280-28570	LEM-1(31)	1 EA
	LDW280-28570	LTA-8(18)	1 EA
LM	LDW280-25570	LTA-5(15)	1 EA
PART NO. LDW280-17375-11&-12			
LM	LDW280-23581	LM-5(35)	1 EA
	LDW280-23581	LM-4(34)	1 EA
	LDW280-25581	LM-3(33)	1 EA
	LDW280 25581	LM-2(32)	1 EA
	LDW280-25581	LM-1(31)	1 EA
	LDW280-25581	LTA-8(18)	1 EA
LM	LDW280-25581	LTA-5(15)	1 EA

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO. GAEC SCH NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17375-15,-16		51-5	

(3)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH

SHEET	1.00	1.10	2.00	3.00						
REV	B	B	B	B						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	
LAST DASH NO. USED	-24

GRUMMAN REL INFO B

PRIM NO. (illegible)

207 WE-15 3/22/9

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS-9-1100 LINE ITEM # 1 DOCUMENTATION TYPE II

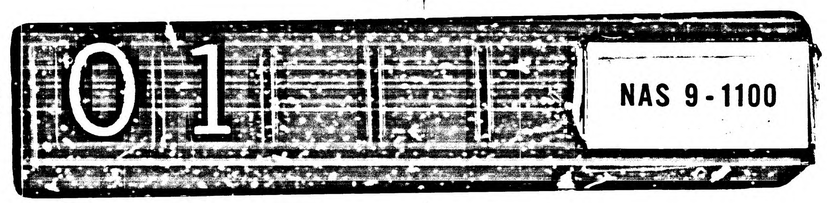
DRAWN BY	P.SCHELL 4 NOV 65		
LAYOUT BY	QUEVEDO 11-9-65		
CHECKED BY	11·9·65		
GR. LEADER	(signature) 11/3/65		
VEH. DES. INT.	(signature)		
STRUCTURES	(signature) 2/1	PROJ ENGR	(signature) 2/3
STRUCTURES	(signature) 2/2	REL GROUP	Betti 2-5-66
WEIGHTS	(signature) 2/2		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

CLIP
DESCENT STAGE-RH FWD BEAM PANEL-
PYRO RELAY BOX SUPPORT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17375	B
SCALE NONE		SHEET 1.00 OF 4	

ENG 77.1 9-64



REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	QUAL APPD
A	1	1,1.1.10					✓	EOA1	FOR-11,-12,-13,-15,-16&-17 ADDED LDW280-25581. FOR LTA-5(15), LTA-8(18)& LEM-1(31) REMOVED LDW280-23581. FOR-19 REMOVED LDW280-23581& LDW280-52581 DELETED LTA-3, LEM2THRU6. (SH.1 OF 4 WAS SH.1 OF 3 ADDED SH. 1.10)	LTA-3,5,8& LEM1,THUR6		✓	DHVELLA 4-14-66		
	2	1&1.10						EOA2	ON-11,-12,-13-15,-16&-17, ADDED N/A LDW280-25581 FOR LEM-2 (32) & LEM-3(33) (1 EA. REQD). ON-19 ADDED N/A LDW 280-52528 FOR LEM-2 (32) & LEM-3(33) (2 EA. REQD)	LEM-2 LEM-3	NOT	REQD	L. DIXON 5-24-66		
	3	1&1.10						EOA3	FOR-11,-12, FOR LTA-5 N/A LDW280-25570 WAS LDW280-23581 LEM-1, LTA-8 N/A LDW 280-28570 WAS LDW 280-23581	LTA-5&-8 LEM-1	NOT	REQD			
	4	1&1.10							REF EOA3 LDW280-23581 WAS LDW280-25581 IN 2 PLACES. (R)	NOT REQD	NOT	REQD			
B	1	1.00							INC EOB1	LM-4, LM-5 LM-6, LTA-3			G. DUMITRESKU 10-11-68		
	2	1.00 2.00 3.00							INC EOB2	LTA-5, LTA-8 LM-1, LM-2 LM-3					
	3	1.00							INC LEO280-478	LM-7 THRU LM-15					
	4	1.00							INC LEO280-543	LTA-3DR					
	5	1.00 2.00 3.00		(R)					INC EOB5	LM-6THRU LM-15 LTA-3					
	6	1.00							INC EOB6	LM-2, LM-3			JOE B		

FOR CONTINUATION OF REVISIONS SEE SHEET _____

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17375	B
SCALE NONE		SHEET 1.1D	

ENG 77.3 5-65

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17375-24	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.036x1 7/8x12	T6	88	
		-23	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.036x1 7/8x12	T6	88	
		-21	E	CHANNEL	AL ALLOY SH	QQ-A-250/12	7075-O	.032x3 5/8x12 5/8	T6	88	
		-19	E	STRAP	AL ALLOY SH	QQ-A-250/12	7075-T6	.032x1 1/4x3 5/8	NONE	88	
		-17	E	CHANNEL	AL ALLOY SH	QQ-A-250/12	7075	.032x3 5/8x12 5/8	T6	88	
		-16	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.036x1 7/8x12	T6	88	
		-15	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.036x1 7/8x12	T6	88	
		-13	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.024x1 3/4x3 1/4	T6	88	
		-12	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.032x2x4 3/4	T6	88	
		LDW280-17375-11	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.032x2x4 3/4	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
T6	AL HEAT TREAT	MIL-H-6088
88	ANODIZE	LSP14-9030

I&T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17375	B

SCALE NONE SHEET 2.00

ENG 77.2 7-65

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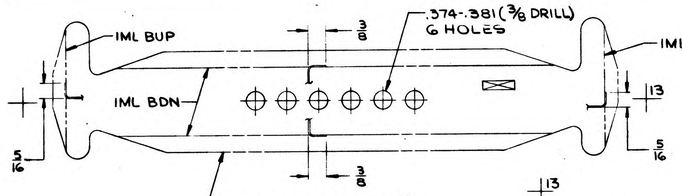
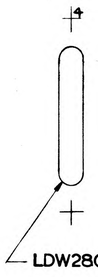
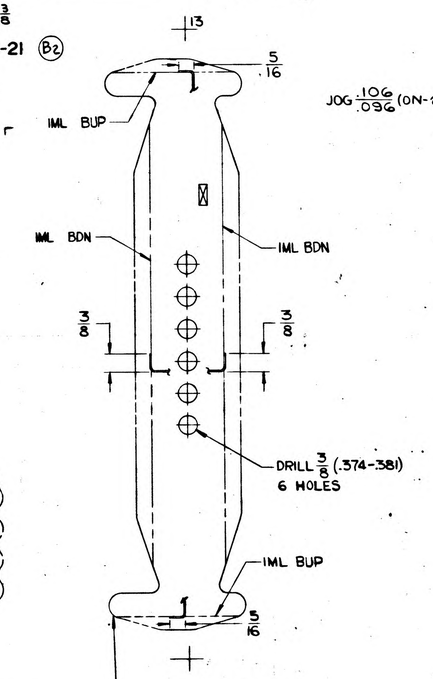
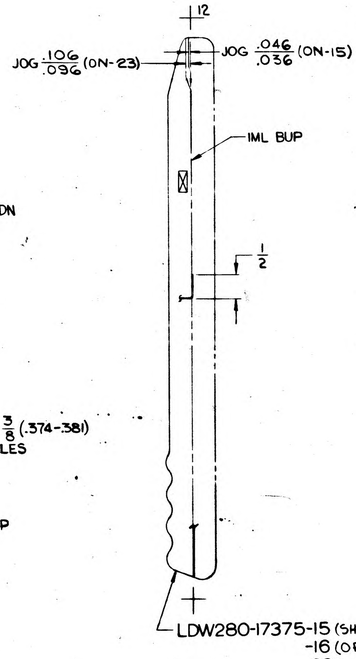
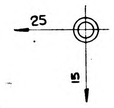
NAS 9-1100

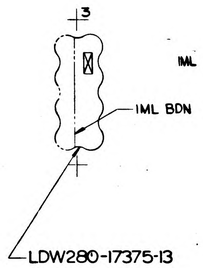


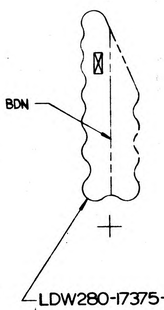












NOTES:

1. NO TOOLING HOLES PERMITTED IN PARTS.

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED ⊠ USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .010R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
700 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL √ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
D	26512	LDW280-17375	B

LEM — MODEL OR END ITEM — SCALE FULL — SHEET 3

2 FOR PHOTO REPRODUCTION

NG
ENG 22.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-17375 | EO NO. B1
CONTROL INFO NO. LM-2-2969

EXTEND EFF OF -13,-15,-16 AS SHOWN -
-13,-15,-16, N/A LDW280-23581, LTA-3(13), LM-4(34), LM-5(35),
LM-6(36) (1) EA REQD/MOD

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: DETAIL PARTS REQD FOR LATER EFFECTIVITIES

DESCRIPTION OF EO: ADDED IN H1B, FOR -13(1), -15(1), -16(1), N/A LDW280-23581, LTA-3(13), LM-4(34), LM-5(35), LM-6(36)

(B) GAEC EO RELEASE: 11/6 — 012065

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4(34)	LTA-3(13)
		LM-5(35)	
		LM-6(36)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REQD | REWORK | SCRAP
PRIORITY: C
DRAWING TITLE: CLIP-D.S.-R.H.F.B.P-PYRO RELAY BOX SUPPORT
DRAWING NO.: LDW280-17375
EO NO.: B1

	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	WEIGHT ENGRG	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
	[illegible]	11/5				11/3/66	11/3/66	11-7-66
	VDI	-6-				CAW	CAW	RWC(EW)

Final 3/14/68

ISSUED BY: LIAISON C. FARLEY X3604 11/3/66 SECTION: V. D. I. GROUP NO. 335 PL. 35 EA F

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NAS 9-1100

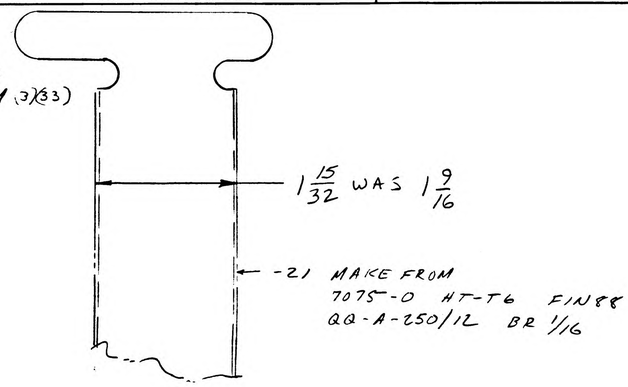
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-66

ENGINEERING ORDER

DWG. NO. LDW280-17375		EO NO. 82
CONTROL INFO NO. LM 5-11294		

IN F/D, B/M & N/A BLOCK
ADD -21 IDENT TO
-17 EXCEPT AS NOTED
EFF FOR LM1(31) THRU LM3(33)
IN N/A BLOCK FOR -17
RESTRICT TO LTA(8)
& LTA(5)



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DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: TO FACILITATE INSTL OF RELAY BOX

DESCRIPTION OF EO: IN F/D, B/M & N/A ADDED -21 RESTRICTED -17 TO LTA8(18) LTA5(15)

GAEC EO RELEASE: N

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LTA5(15) LTA8(18)	
LM		LM1(31) THRU LM3(33)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: REWORK; SCRAP -17
PRIORITY: C
DRAWING TITLE: CLIP-D/S-RH FWD BEAM PANEL-PYRO RELAY BOX SUPT
DRAWING NO.: LDW280-17375
EO NO.: 82

	APPROVED BY	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRE'S GROUP	LIAISON ENGRG	PROJ ENGRG	GOVT
	WT	12/7/66			12-7-66		12-7-66	12-8-66	12-16-66
	VDI	5							

ISSUED BY RAGAS X6454 SECTION VDI GROUP NO. 335 PL 5

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER * EMP A

DWG. NO. LE0280 — EO NO. #78
CONTROL INFO NO. LDWE80A55643

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS * THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45). QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280M17179	B1	SEE DRAWING
M17193	A3	
M17207	B5	
M17272	B1	
M17282	B1	
M17299	B1	
M17301	B4	
M17331	D1	
M17360	A7	
M17488	B1	
M17502	B1	
M17506	A1	
M17641	A3	
-17131	C4	
-17162	D1	
-17231	B5	
-17362	B2	
-17375	B3	
-17661	A1	
-17742	A1	
-17969	B1	
-18062	B2	
-18101	A4	
-18118	A1	
-23689	A1	
-23691	B3	
-23694	B1	
-23722	A4	
-54516	B4	
LDW280-		SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

THIS IS AN ORIGINAL EO

DETAIL SPEC REQ | CL 'X' ENGRG CHG | CL 'X' ENGRG CHG

REASON FOR EO: ADDITIONAL REQUIREMENTS

DESCRIPTION OF EO: FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.

GAEC EO RELEASE: FR 2/23/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-7(37) LEM-8(38) LEM-9(39)	
LEM		LEM-10(40) LEM-11(41) LEM-12(42)	
LEM		LEM-13(43) LEM-14(44) LEM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD SO

DISPOSITION OF PARTS: NOT REQ'D | REWORK | SCRAP

APPROVED BY: [signature] | DATE: 6 | V.D.J.

SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRS
			2/15/67		2-16-67 2-17-67

PRIORITY: C

DRAWING TITLE: NOTED

DRAWING NO.: LE0280

EO NO.: 478

ISSUED BY M. GREY / J. STRAKOSCH · X-453 SECTION VEHICLE DESIGN INT. GROUP NO. 280 PL 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO280 | EO NO. 543
CONTROL INFO NO. LDW280A-6091

ADD LTA-3DR EFF FOR THE FOLLOWING DRAWINGS AND DASH NUMBERS AS NOTED BELOW:

DRAWING	** DASH NO	TITLE	CHANGE NO	QTY/MOD	N/A
LDW280-17623	-13	SEE DWG	B4	2	LDW280-23566
				8	LDW280-23578
LDW280-17744	-17		B2	1	LDW280-23572
"	-19			1	"
"	-21			1	"
LDW280M17612	-1		A5	1	"
LDW280M17613	-1		A3	1	"
LDW280M17639	-3		C2	1 EA	LDW280-23572 LDW280-23532
LDW280-17362	-13		B3	1	LDW280-23581
"	-14			1	"
LDW280-17375	-13		B4	1	"
"	-15			1	"
"	-16			1	"
LDW280-17654	-13		B3	1	"
"	-17			2	"
"	-19			2	"
"	-21			1	"
"	-23			1	"
"	-24			1	"
LDW280-17213	-19		C2	1	LDW280-23585
LDW280-17436	-11			1	"
"	-15		B3	2	"
"	-17			1	"
"	-21			1	"
LDW280M17282	-5		B2	1	"
"	-7			1	"
LDW280M17283	-5		C1	1	"
LDW280M17284	-1		A2	1	"
LDW280M17463	-1		A2	1	"
LDW280M17547	-2		A3	1	"
LDW280-17174	-11		C3	1	LDW280-23590
"	-17			1	"
LDW280-17449	-11		A2	1	LDW280-23591
LDW280-17450	-19		B3	1	"
"	-20			1	"
LDW280-17451	-15		A2	1	"
"	-16			1	"
LDW280-17689	-15		B1	1	LDW280-23597
"	-17			1	"

DETAIL SPEC REQ | CL II ENGRG CHG ✓ | CL I ENGRG CHG | LCD19-1242 2/22

REASON FOR EO: FAILURE OF LTA-3D IN STATIC TEST

DESCRIPTION OF EO: FOR ** ADDED LTA-3DR EFF

GAEC EO RELEASE: JK 4/9/67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-3DR (46)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: NOT REQD | REWORK | SCRAP
APPROVED BY / DATE: 5 VDI 3/22/67 | SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG | PROJ ENGRG | QUIT
PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO280
EO NO.: 543

ISSUED BY E. FRANK / J. STRAKOSCH X1153 SECTION VDI GROUP NO. 335 PL 25

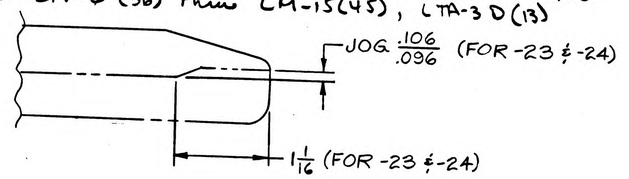
NAS 9-1100

ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-17375 | EO NO. B5
CONTROL INFO NO. LM-2- 4239

IN FLD/DWG, B/M & MOD/BLK ADD -23 & -24 (-23 & -24 REPLACE -15 & -16 AND ARE IDENTICAL EXCEPT AS SHOWN) EFF LM-6 (36) thru LM-15(45), LTA-3D (13)



IN MOD/BLK FOR -15 & -16, FOR NEXT ASSY, LDW280-23581, REMOVE LM-6 (36) thru LM-15(45), LTA-3D (13)

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓	LCD 2011 CCA 688

REASON FOR EO: PROVISIONS FOR MODULAR EQUIPMENT STOWAGE.

DESCRIPTION OF EO: IN FLD/DWG, B/M & MOD/BLK ADDED -23 & -24 IN MOD/BLK FOR -15 & -16, DELETED LM-6(36) THRU LM-15(45), LTA-3D(13)

(2) GAEC EO RELEASE: A

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-6(36)THRU	
		LM-15(45)	
		LTA-3D(13)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO
DISPOSITION OF PARTS: REWORK; SCRAP ✓
PRIORITY: C
DRAWING TITLE: CLIP-D/S-R.H. FWD BEAM PANEL PYRO RELAY BOX SUPPORT
DRAWING NO.: LDW280-17375
EO NO.: B5

	APPROVED BY	DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
	[illegible]	12-2-67	VDI		—	[illegible]	[illegible]	[illegible]
					—	12/1/67	12/1/67	12-2-67

02025 12-9-67

ISSUED BY LIAISON J. MALONEY 11/21/66 X3604 SECTION V.D.I. GROUP NO. 335 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.1 REV 3-65

DWG. NO. LDW280-17375 | EO NO. B6
CONTROL INFO NO. LDW280B1431

FOR -19
REMOVE NEXT ASSY LDW220-52528

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG
	V	

REASON FOR EO: TO AGREE WITH N/A (CDR LIST)

DESCRIPTION OF EO: FOR -19 REMOVED N/A LDW280-52528

(R) GAEC EO RELEASE: VK 9/6/67 (5)

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-2(32)	
LM		LM-3(33)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REV WK	SCRAP
V			V

PRIORITY: C

DRAWING TITLE: DOUBLER - O/S PROPELLANT TANK SUP.

APPROVED BY									
DATE									
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		
				1-17-68	1-19-67				

DRAWING NO.: LDW280-17375 EO NO.: B6

ISSUED BY: ROESSLER/THORJUSEN X1153 SECTION: VDI GROUP NO.: 335 PL: 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | EO NO. 1347
CONTROL INFO NO. LDW280B7395

FOR THE DWGS LISTED BELOW DELETE LM-15(45), EFF FROM ALL DASH NOS. *

DWG NO.		CHANGE NO	DWG NOMENCLATURE
LDW280-17352	✓	A4	SEE DWG
-17354	√	C1	
-17356	√	B3	
-17362	√	B5	
-17365	√	B4	
-17366	√	C3	
-17369	√	A5	
-17375	√	C1	
-17379	√	D4	
LDW280-17381		B3	SEE DWG

* APPLICABLE DASH NOS (5)

DETAIL SPEC REQ | CL II ENGRG CNG | CL I ENGRG CNG | ✓ LCD 3587 PKG 50 PG. 10 CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM —*

GAEC EO RELEASE: 4/16/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	—	LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO -
DISPOSITION OF PARTS: REWORK | SCRAP ✓
APPROVED BY: DATE 4/16/69 (VDI) | SUPPORT | RELIAB GROUP | GROUP LEADER 4/24/69 | STRESS GROUP 4/18/69 | LIAISON ENGRG 4/9/69 | PROJ 4/16/69

PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO 280
EO NO.: 1347

PS 2869 ISSUED BY MEVORAH / THORTUSEN X86046 SECTION VEH DES INT GROUP NO. 335 PG. 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENGINEERING ORDER

DWG. NO. LEO 280 | EO NO. 1540

CONTROL INFO NO. LDW280B 8080

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40) [redacted]
ADD LTA-11 ([redacted] 23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING NO *	TITLE	CHANGE NO
LDW280-17375	SEE DWG	C2
379		D5
381		B4
384		B5
385		C4
—		
393		B4
397		B5
413		D4
LDW280-17414	SEE DWG	B4

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG 99 PG 596 496 (5)

REASON FOR EO
NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO
ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: JK 8-8-69; JK 8/11/69; 8-8-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11([redacted] (23)	

DRAWING CHANGE REQD: ✓ REVISE DWG | RECORD EO
DISPOSITION OF PARTS: NAT. REQ'D REWORK | SCRAP

APPROVED BY									
DATE	7-29-69		8/1/69	N		8-4-69			
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	GAEC REL	

PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO: LEO 280
EO NO: 1540

8-12-69
ISSUED BY G. HANSMANN X87222 (ML) SECTION VDI GROUP NO 335 PL 25

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO 280		EO NO. 1691
CONTROL INFO NO. LDW 280 B8487		

FOR THE DWGS LISTED BELOW DELETE LM-10 (40) THRU LM-14 (44) & LTA-11 (23) EFF. FROM THE FOLLOWING DETAILS

DWG NO (*)	CHANGE NO	DWG NOMENCLATURE
LDW 280-17362-13	B7	CHANNEL
-17362-14		CHANNEL
-17375-13	C3	CLIP
-17375-23		CLIP
-17375-24		CLIP
-17654-23	B8	CHANNEL
-17654-24		CHANNEL
-17654-13		DOUBLER
-17654-17		CLIP
-17654-19		CLIP
LDW 280-17654-21		CHANNEL

B7222

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LEO 3494 PKG 93

REASON FOR EO: PYRO RELAY BOX RELOCATED FOR H_2O TANK CLEARANCE.

DESCRIPTION OF EO: FOR (*) REMOVED LM-10 (40) THRU LM 14 (44) & LTA-11 (23) EFF.

(5) GAEC EO RELEASE: ✓ 9-26-69; VC 9/26/69; Bauman 9/26/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10 (40) THRU	
		LM-14 (44) &	
		LTA-11 (23)	

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
			✓

APPROVED BY									
DATE	9/26/69			9-23-69	9-22-69		9/26/69	9/26/69	
	VDI	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG	CONT.	

PRIORITY: C

DRAWING TITLE: SEE DWGS

DRAWING NO.: LEO 280

EO NO.: 1691

9/26/69 ISSUED BY BONELLI X1392 SECTION V.D.I. GROUP NO. 335 PL 25

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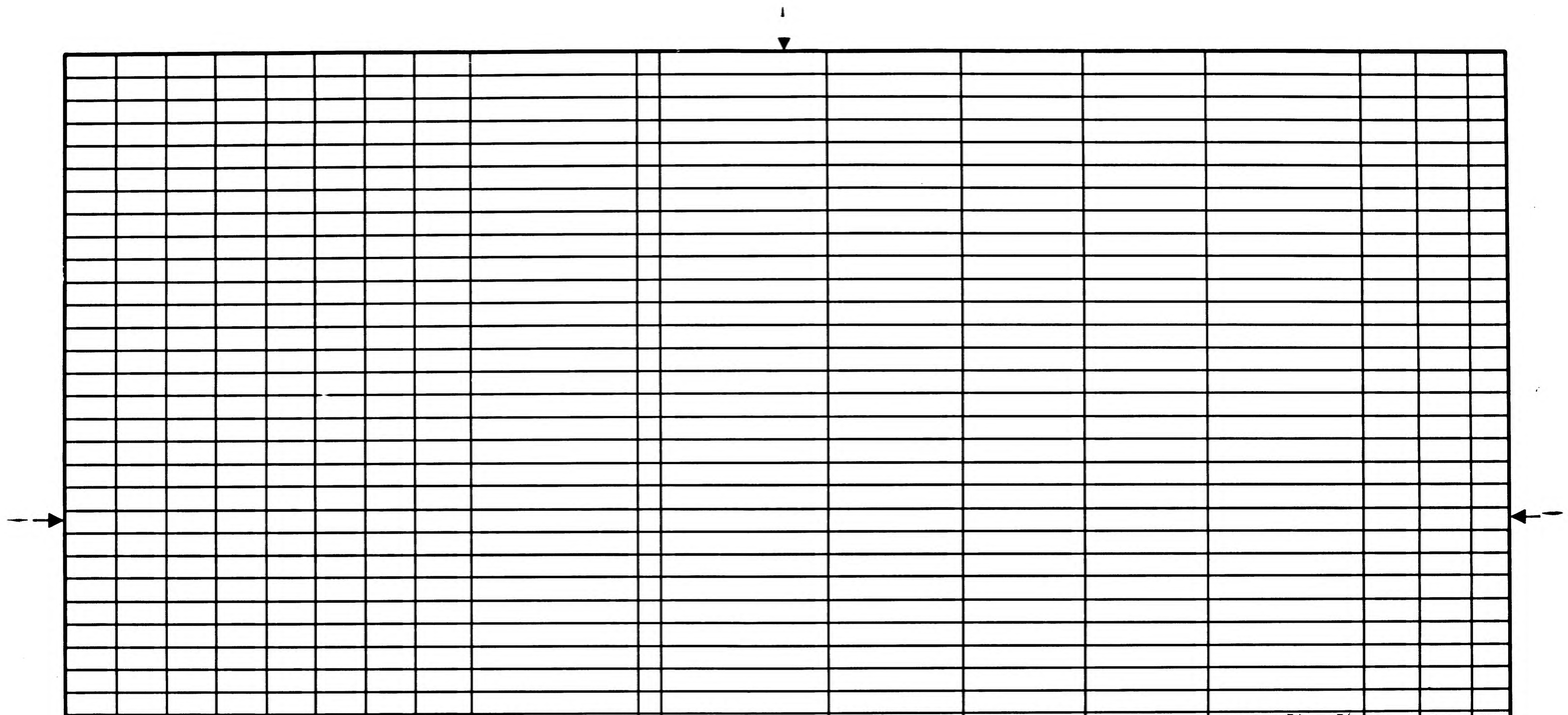
NAS 9-1100



QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17379-15	E	ZEE	AL ALLOY SH	QQ-A-250/12	7075	.028×3¾×20⅞	T6	88	6A
		LDW280-17379-17	E	ZEE	AL ALLOY SH	QQ-A-250/12	7075	.040×4×12½	T6	88	4C

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
38	ANODIZE	LSP14-9030
T6	HEAT TREAT	MIL-H-6088

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17379	B

SCALE NONE | SHEET 2.00

ENG 77.2 7-65

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NAS 9-1100

LDW280-17379 C

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
LM	LDW280-23611	LM-15(45)	1 EA
		LM-14 (44)	
		LM-13 (43)	
		LM-12 (42)	
		LM-11 (41)	
		LM-10 (40)	
		LM-9 (39)	
		LM-8 (38)	
		LM-7 (37)	
		LEM-6 (36)	
		LEM-5 (35)	
		LEM-4 (34)	
		LEM-3 (33)	
		LEM-2 (32)	
		LEM-1 (31)	
		LTA-8 (18)	
		LTA-5 (15)	
LM	LDW280-23611	LTA-3 (13)	1 EA
PART NO. LDW280-17379-15E-17		GAEC SCH NO. 50-3	

(5)

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10		2.00		3.00			
REV	C	C		B		C			
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	B-B	GRUMMAN REL INFO C	
LAST DASH NO. USED	-17	PRIM NO. JK(001)	
		207 MP-16C-10/25/67	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH					
DETAIL SPEC REQUIREMENT					
CLASS II ENGRG CHANGE					
CLASS I ENGRG CHANGE					

CONTRACT NO. NAS 9-1100				LINE ITEM # 1	DOCUMENTATION TYPE II
DRAWN BY	R. THOMSON 4-12-66	WEIGHTS	W.G. MANDRAS 4/15	GRUMMAN AIRCRAFT ENGRG CORP BETHPAGE, L. I., NEW YORK	
LAYOUT BY	R. FISCHLER 4/12/66	RELIABILITY			
CHECKED BY				ZEE	
GP LEADER	J.H. STRAKOSCH 4/12/66			DESCENT STAGE — PROP. LINES SUPPORT TRUSS - L.H. AFT	
VEH DES INT	W. BISCHOFF 4/12				
STRUCTURES	J.K., N.M., W.J.H., F.E.D. 4/13	PROJ ENGR	J. ALBER 4/18/66	SIZE B	CODE IDENT NO. 26512	LDW280-17379 C (1)
STRUCTURES	HILDERMAN 4/13	REL GROUP	A. CARAMANICA 4/21	SCALE NONE	SHEET 1.00 OF 4

ENG 77.1 12-65

THIS DRAWING SUPERSEDES LDW280-17379 "NO CHANGE" 6/6/66

01

NAS 9-1100

REVISIONS

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	APPD
									RETRACED, NO CHANGE; LAST REV., NO CHANGE. LOFTED WAS DIMENSIONED. SH 1.00 OF 4 WAS 1.00 OF 3.00. M.C. LOEW 6-6-66 EG						
A	1	1.00, 1.10 2.00, 300						EOA1	REMOVED -13 AND ADDED -15 EG	LTA-3-5-8 LEM-1 THRU-6		-13	LOEW 6-6-66		
B	1	1.00, 1.10 2.00, 3.00						EO B1	REMOVED -11, ADDED -17	LTA-3,-5,-8 LEM-1 THRU-6		-11			
C	1	1.00, 1.10						LE0280-302	IN M/B FOR -15 & 17 ADDED EFFECTIVITIES LM-7(37) THRU LM-15(A5)	LM-7 THRU LM-15	NOT	REQD	AUTHORITY [illegible] 10-11-67		
	2	3.00					✓		ON SH 3.00 REVISED -17 TO AGREE WITH EO B1	NOTED	✓				

FOR CONTINUATION OF REVISIONS SEE SHEET _____

ENG 77.3 5-65

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17379	C

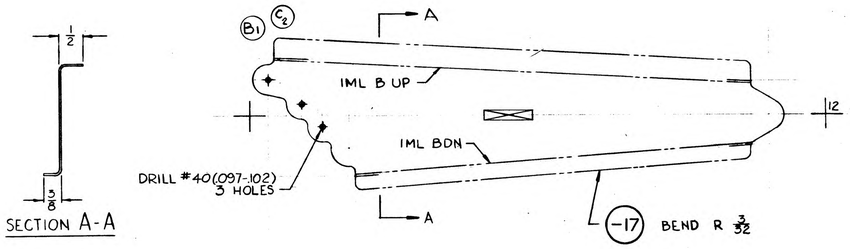
SCALE NONE SHEET 1.10

01

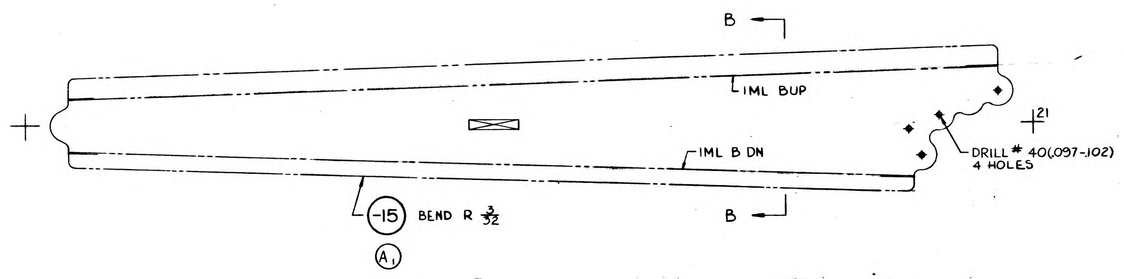
NAS 9-1100

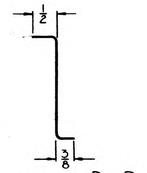
LDW280-17379C

NOTE
1. NO TOOLING HOLES PERMITTED IN PART.



SECTION A-A





SECTION B-B

MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED
NOTES CHECKED ✓ APPLY TO THIS DWG.

Rubber Stamp PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010; .063R TO .250R ± .015; OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MM-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ✓ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	✓
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	✓

	GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK		
	SIZE	CODE IDENT NO.	LDW280 – 17379 C
LEM	D	26512	
MODEL OR END ITEM	SCALE FULL		SHEET 3.00

ENG 73-3 6-64

FOR PHOTO REPRODUCTIO

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 22.1 REV 3-65

DWG NO. LDW280-17379 | EO NO. D2
CONTROL INFO NO. LM-5-21152

CANCEL EO D1

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	✓ LCD 2965 · CCA 1235

REASON FOR EO
-17 ON 'C' CHANGE DWG DOESN'T AGREE WITH -17 ON 'D' CHANGE

DESCRIPTION OF EO
CANCELLED EO D1 WHICH CREATED -19 THEREON

(15) GAEC EO RELEASE ✓

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.
LM		LM-5(35) THRU LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK | -19 SCRAP
APPROVED BY / DATE: VD1 | SUPPORT | RELIAB. GROUP

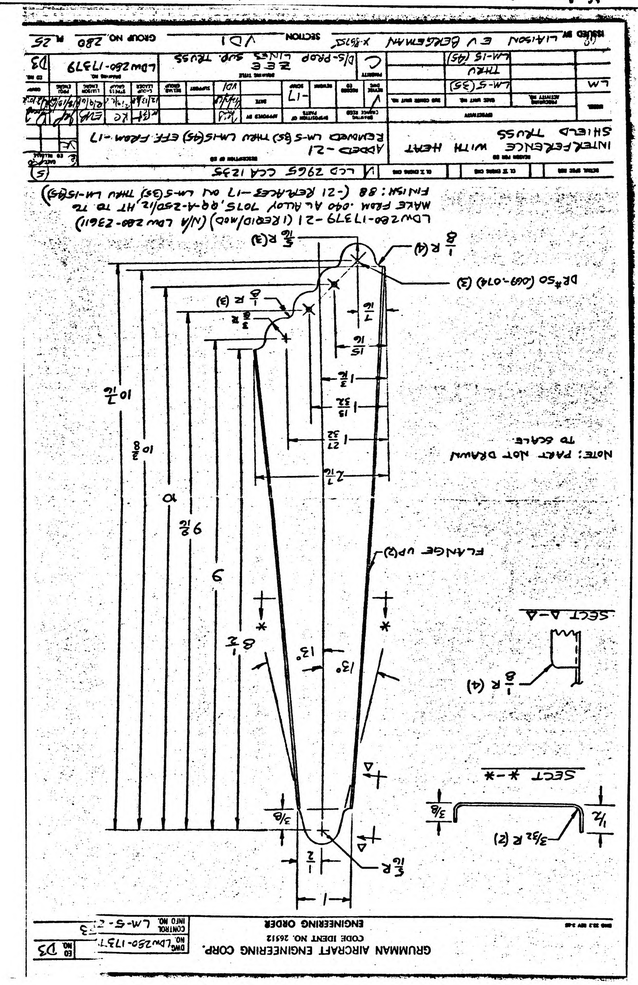
GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG	CHIEF ENGR
KC 12/12/68	LDW 12/9/68	JAP 12/10/68	12/10-68	

PRIORITY: C
DRAWING TITLE: ZEE D/S-PROP LINES SUP. TRUSS
DRAWING NO.: LDW 280-17379
EO NO.: D2

ISSUED BY LIAISON E V BERGEMAN X-86755 SECTION VD1 GROUP NO. 280 PL 25

084

0865


NOTE: PART NOT DRAWN TO SCALE.
DP#50 (049-074) (3)
FLANGE UP(3)
SECT A-A
SECT *-*
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER
INTERFERENCE WITH HEAT SHIELD TRUSS
ADDED -21
REVISED LM-5 (85) THRU LM-15(95) EFF FROM -17
LDW280-17379 -21 (REDID/MOD) (N/A LDW 280-23611)
MAKE FROM .040 AL ALLOY 7075, 88-A-250/12, HT TO TE
FINISH: 88 (-21 REFRACEF-17 OU LM-5(85) THRU LM-15(95)
LDW 280-17379 03

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | ED NO. 1347
CONTROL INFO NO. LDW280B 7395

FOR THE DWGS LISTED BELOW DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.		CHANGE NO	DWG NOMENCLATURE
LDW280-17352	✓	A4	SEE DWG
-17354	✓	C1	
-17356	✓	B3	
-17362	✓	B5	
-17365	✓	B4	
-17366	✓	C3	
-17369	✓	A5	
-17375	✓	C1	
-17379	✓	D4	
LDW280-17381		B3	SEE DWG

* APPLICABLE DASH NOS (5)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3587 PKG 50 PG. 10 | CCA 1821

REASON FOR ED: LM-15(45) NO LONGER REQD

DESCRIPTION OF ED: DELETED LM-15(45) EFF FROM —*

EFFECTIVITY

MODEL	PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM	—	LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD ED -
DISPOSITION OF PARTS: REWORK | SCRAP ✓

APPROVED BY / DATE: VDI 4/16/69 | SUPPORT | RELIAB GROUP | GROUP LEADER 888 4-2-69 | STRESS GROUP W.H.H. 4/18/69 | LIAISON ENGRG 4/18/69 | PROJ ENGRG 4/18/69 | GAEC ED RELEASE 4/16/69

PRIORITY C

DRAWING TITLE: SEE DWG

DRAWING NO.: LEO 280

ED NO. 1347

PS-369 ISSUED BY MEVORAH / THORJUSEN X86046 SECTION VEH DES INT GROUP NO. 335-25

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NAS 9-1100

DWG 22.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

WORK NO. LEO 280 | EO NO. 1540
CONTROL INFO NO. LDW 280B 8080

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40) [redacted]
ADD LTA-11 ([redacted] 23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING NO *	TITLE	CHANGE NO
LDW280-17375	SEE DWG	C2
379		D5
381		B4
384		B5
385		C4
—		
393		B4
397		B5
413		D4
LDW280-17414	SEE DWG	B4

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3890 PKG 99 PG 5 & 6 & 96 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: 8-8-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11([redacted] (23)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REQ'D | REWORK | SCRAP

APPROVED BY									
DATE	7-29-69			7-29-69	N		8-7-69	8-7-69	8-7-69
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG		

PRIORITY: C
DRAWING TITLE: SEE DRAWINGS
DRAWING NO.: LEO 280
EO NO.: 1540

8-12-69 ISSUED BY G. HANSMANN X87222 (ML) SECTION VDI GROUP NO 335 PL 25

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 1774

CONTROL INFO NO. LDW280B9027

FOR THE FOLLOWING DRAWINGS & DASH NUMBERS * FOR N/A LDW280-23611

DELETE LM-10(40) THRU LM-14(44) & LTA-11(23) EFFECTIVITIES.

DWG NO. Δ	DASH NO. *	CHG NO	TITLE
LDW280-17379	-15 & -21	D6	SEE DWG
-17858	-11,-13,-15,-17 & -19	B4	
LDW280M17564	-1	B5	SEE DWG

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | ✓ LCD 3994 PKG 60

REASON FOR EO: REMOVAL OF BALANCE LINES

DESCRIPTION OF EO: FOR *; DELETED LM-10(40) THRU LM-14(44) & LTA-11(23) EFF FOR N/A LDW280-23611.

GAEC EO RELEASE: (5) JK 12/2/69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-10(40) THRU	
		LM-14(44) & LTA-11(23)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO

DISPOSITION OF PARTS: REWORK | SCRAP ✓

PRIORITY: C

DRAWING TITLE: NOTED

APPROVED BY								
DATE	11-20-69			11/19/69	11/24/69	11/27/69	12/1/69	
	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	

DRAWING NO. LEO 280 | EO NO. 1774

CDR 1/23/70 ISSUED BY HERB DONNER X86046 SECTION VDI GROUP NO. 335 PL 25

01

NAS 9-1100

LDW280-17380 B

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	
LM	LDW280-23619	LM-9(39)	1 EA
		LM-8(38)	1 EA
		LM-7(37)	1 EA
		LM-6(36)	1 EA
		LM-5(35)	1 EA.
LM	LDW280-23619	LM-4(34)	1 EA.
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17380-19 & -21		GAEC SCH NO.	
LM	LDW280-23619	DVT(70)	1 EA
		TEST(75)	2 EA
		LM-3(33)	1 EA
		LM-2(32)	1 EA
		LM-1(31)	1 EA
		LTA-8(18)	1 EA
		LTA-5(15)	1 EA
LM	LDW280-23619	LTA-3(13)	1 EA.
MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17380-15 & -17		GAEC SCH NO. 50-3	

5

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH									
SHEET	1.00	1.10	2.00	3.00					
REV	B	B	B	B					
SHEET									
REV									
SHEET									
REV									

LAST SECT LTR USED	A-A	GRUMMAN REL INFO	3/20/69 REK
LAST DASH NO. USED	-21	PRIM NO. E(00)	
		207 ME-1 B- 3/31/69 RS 11/13	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
± 1/32 ±.020 ± 1/2°

ORIG DWG AUTH	
DETAIL SPEC REQUIREMENT	
CLASS II ENGRG CHANGE	
CLASS I ENGRG CHANGE	

CONTRACT NO. NAS 9-1100		LINE ITEM * 1	DOCUMENTATION TYPE II
DRAWN BY	JIM VARGA	RELIABILITY	
LAYOUT BY	JIM VARGA		
CHECKED BY			
GR LEADER	STRAKOSCH 4/8/68		
VEH DES INT	BISCHOFF 4/5		
STRUCTURES	BUNCE 4/8	PROJ ENGR	J. ALBER 4/12
STRUCTURES	HILDERMAN 4/8	REL GROUP	BOTTI 4/12
WEIGHTS	W. MANDRAS 4/11		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

STRAP
DESCENT STAGE-FUEL TANK COVER R.H.
PROPELLENT LINE SUPPORT

SIZE	CODE IDENT NO.		
B	26512	LDW280-17380	B
SCALE NONE		SHEET 1.00 OF 4	

ENG 77.1 12-65

SUPERSEDES LDW280-17380 NO CHANGE 4-12-68

01

NAS 9-1100

REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	GOVT APPD
									RETRACED NO CHANGE LAST REV NONE MELMED 9-22-66 ADDED SH 1.10						
A	1	1.00, 2.00, 3.00						EO A1	IN F/D, B/M & N/A ADDED -15 & -17 REMOVED -11 & -13	LTA-3-5 & -8		-11 & -13	MELMED 9-22-66		
	2							EO A-2	IN F/D REVISED -15 & -17 WIDTH, DIM 15/64 WAS 1/4, 15/32 WAS 1/2	LM-1 THRU -6	✓				
B	1	1.00							INC. LEO 280-302	LM-7 THRU-15					
	2	1.00							INC. LEO 280-700	TEST (75)					
	3	1.00							INC. LEO 280-719	DESIGN VERI-FIC. TEST (70)					
	4	1.00, 2.00 3.00							INC. EO B4	LM-4 THRU LM-15					
	5	1.00		B					INC. LEO 280-1024	LM-6 THRU LM-15		H.D.	JESINGER 3-24-69	J.K.	
	6	1.00							INC LEO 280-1208	LM-6 THRU LM-8			STOMETER 3-26-69		
	7	1.00							INC LEO 280-1279	LM-9		Joe B			

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS
	B					

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17380	B

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01

NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17380-21	E	STRAP	AL ALY SH	QQ-A-250/12	7075	.050 X 1 X 13	T6	88	
		LDW280-17380-19	E	STRAP	AL ALY SH	QQ-A-250/12	7075	.050 X 1 X 16	T6	88	
		LDW280-17380-17	E	STRAP	AL ALY SH	QQ-A-250/12	7075	.050 X 1 X 13	T6	88	
		LDW280-17380-15	E	STRAP	AL ALY SH	QQ-A-250/12	7075	.050 X 1 X 16	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP-14-9030
T6	AL HEAT TREAT	MIL-H-6088

I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

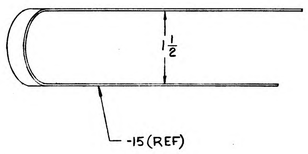
SIZE	CODE IDENT NO.		
B	26512	LDW280-17380	B

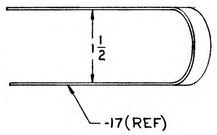
SCALE NONE SHEET 2.00

ENG 77.2 7-65

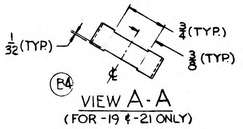
01

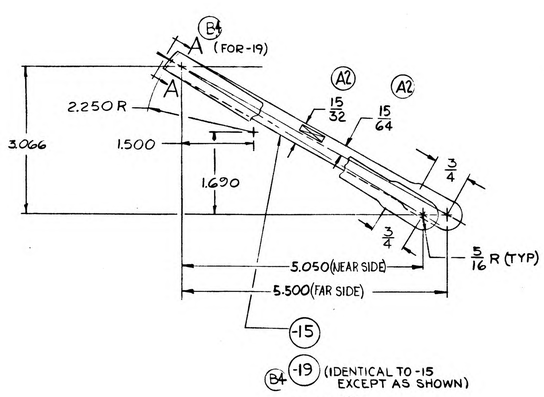
NAS 9-1100

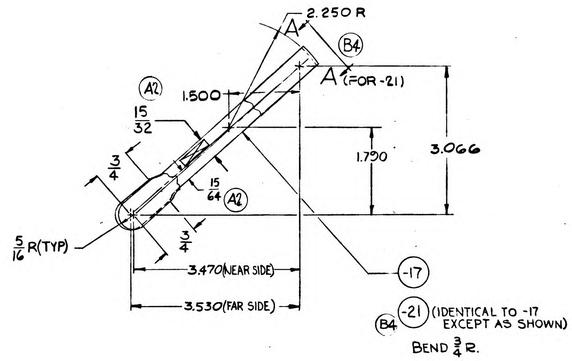




NOTE
1. NO TOOLING HOLES PERMITTED IN PARTS.







MANUFACTURING OPERATIONS UNLESS OTHERWISE SPECIFIED NOTES CHECKED ✓ APPLY TO THIS DWG.	
RUBBER STAMP PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	✓
FILLET AND INSIDE CORNER RADII TOLERANCES .015R TO .062R ± .010 .063R TO .250R ± .015 OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP. THDS. BEYOND PERMISSIBLE	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ≤ .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN TO .0005 MAX. MIN THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCES FOR PLATING IN HOLES.	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
200 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS. BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ✓ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	
LENGTHS OF AN, MS & NS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED	
TOLERANCE ON LOFTED DELINEATIONS IS	

	GRUMMAN AIRCRAFT ENGRG CORP. BETHPAGE, L. I., NEW YORK		
	SIZE	CODE IDENT NO.	LDW280-17380 B
LM	D	26512	
MODEL OR END ITEM	SCALE FULL		SHEET 3 OF 6

DRG 753 644

LDW280-17380 B

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LEO280 | EO NO. 308
CONTROL INFO NO. LDW280A1001

DMG 32.2 REV 3-65

TO THE FOLLOWING DRAWINGS LISTED BELOW AND THEIR DASH NUMBERS * THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-17344	B1	SEE DRAWING
-17347	B1	
-17348	C1	
-17349	B3	
-17352	A2	
-17354	B1	
-17356	B1	
-17365	B2	
-17366	C1	
-17369	A2	
-17379	C1	
-17380	B1	
-17381	B1	
-17382	A1	
-17383	A1	
-17384	B2	
-17385	C1	
-17388	D22	
-17393	B2	
-17395	C2	
-17397	B1	
-17398	B1	
-17399	C1	
-17400	B3	
-17412	B1	
-17413	C1	
-17414	B2	
-17415	B1	
-17416	B1	
-17417	B1	
-17418	B1	
-17419	B1	
LDW280-17420	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG

REASON FOR EO: ADDITIONAL REQUIREMENTS

DESCRIPTION OF EO: FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.

GAEC EO RELEASE: FR 10/13/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LEM		LEM-7(37) LEM-8(38) LEM-9(39)	
LEM		LEM-10(40) LEM-11(41) LEM-12(42)	
LEM		LEM-13(43) LEM-14(44) LEM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: NOT REQ'D | REWORK | SCRAP

APPROVED BY: DATE 10-13-66 | VDI | SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP 10/5/66 | LIAISON ENGRG | PROJ ENGRG 11-11-66

PP C | DRAWING TITLE: NOTED | DRAWING NO.: LEO280 | EO NO. 302

ISSUED BY M. GREEY / J. STRAKOSCH X1153 SECTION VEHICLE DESIGN INT. GROUP NO. 280 PL 35

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO-280 | EO NO. 760
CONTROL INFO NO. LDW280A-8983

ENG 33.2 REV 3-65

ADD EFFECTIVITY "TEST (75)" TO THE FOLLOWING DWGS:

		SEE DWG	E.O.
54 EA	LDW 280M17488-1		B2
2	LDW 280-17382-11		A2
2	-13		
4	-15		
1	LDW 280-17383-11		B1
1	-13		
1	-15		
1	-17		
4	LDW 280-17415-11		B2
2	-13		
2	-15		
3	LDW 280-17766-11		B2
2	-13		
6	-15		
2	LDW 280-17416-15		B3
1	-17		
1	-19		
2	LDW280-17380-15		B2
2	-17		
3	LDW 280-17765-15		B2
1	-17		
2	-19		
1	LDW 280-17767-15		B2
1	LDW 280-17767-17		
2	LDW280-17388-459 DSO-24	SEE DWG	
1	-455 DSO-24		
1	-240 DSF-24		
2	-224 DSF-24		H7
1	-239 DSO-28		
1	-238 DSO-28		
2	-119 DSO-28		
1	-111 DSO-28		
2	-109 DSF-24		
1 EA	LDW280-17388-108 DSF-24		

			E.O.
1 EA	LDW280M17689-3	SEE DWG	B2
1	LDW280M17560-1		B6
1	LDW280M17561-1		B3
3	LDW280M17562-1		B4
3	LDW280M17563-3		B3
2	LDW280M17558-1		B4
2	LDW280M17559-1		B4
2	LDW280M17556-1		C2
2	LDW280M17557-1		B2
1	LDW280-17992-11		B3
2	-13		
2	LDW280-18063-11		A3
1	-13		
1	LDW280-18036-11		B1
1	-13		
2	-15		
1	-17		
2	-19		
2	-21		
10	LDW280M17655-3		B2
18	-1		
3	LDW280M16126-11		A1
5	LDW280M17352-1		B5
6 EA	LDW280M17353-1	SEE DWG	B2

"ABOVE HDWE SHOWN ON LSK270-1052 COVER TEST ASSY."

DETAIL SPEC REQ		CL II ENGRG CHG	✓	CL I ENGRG CHG		LCD-2055		5
REASON FOR EO: TO PROVIDE ADDITIONAL EFFECTIVITY				DESCRIPTION OF EO: ADDED TEST(75) FOR ALL DASH NUMBERS NOTED				GAEC EO RELEASE: VK 7/5/67
MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG ✓ / RECORD EO	DISPOSITION OF PARTS: NONE REWORK / REQD SCRAP	APPROVED BY / DATE	SUPPORT	RELIAB. GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ. ENGRG
LM		TEST (75)				VDI 8/29/67			KB 8/22/67	8/30/67		8/31/67 9-5-67
				PRIORITY: C	DRAWING TITLE: SEE DWG				DRAWING NO.: LEO-280			EO NO. 700

9/5 ISSUED BY B. J. ZANG X1472 29AUG'67 SECTION PROPULSION DESIGN GROUP NO. 345 PL 25

TO

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

BNG 32.2 REV 3-65

DWG. NO. LEO 280 | EO NO. 719
CONTROL INFO NO. LDW 280A 9409

FOR THE FOLLOWING DETAIL PARTS ADD DESIGN VERIFICATION TEST (70) REQMTS FOR THE NEXT ASSEMBLIES INDICATED WITH THE NOTED QUANTITIES.

DETAIL PART #. (*)	NEXT ASSY LDW 280-23619 QTY/MODULE.	NEXT ASSY LDW 280-23622 QTY/MODULE	CHG NO.	TITLE.
LDW 280 M17556-1	1		C3	FITTING
LDW 280 M17557-1	1		B3	FITTING
LDW 280 M 17488-1	8	6	B3	WASHER
LDW 280-17382-11 -13 -15	1 1 2		A3	CHANNEL
LDW 280-17380-15 -17	1 1		B3	STRAP
LDW 280 M 17562-1		1	B5	FITTING
LDW 280 M 17563-3		1	B4	FITTING
LDW 280-17765-15 -17		1 1	B3	STRAP
LDW 280-17766-11 -13 -15		1 1 1	B3	CHANNEL

LMLK

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | LCO 1894

REASON FOR EO: REDUCE PROPELLANT LEAKAGE

DESCRIPTION OF EO: FOR (*) ADDED DESIGN VERIFICATION TEST (70) REQMTS.

GAEC EO RELEASE: JK 9-27-67

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LH		DESIGN VERIFICATION TEST (70)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK | SCRAP NOT REQD
PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO 280
EO NO.: 719

APPROVED BY: JKP 9/27/67 | DATE: 9/27/67 | V.D.I. | SUPPORT | RELIAB. GROUP | GROUP LEADER | STRESS GROUP 9/27 | LIAISON ENGRG | PROJ ENGRG 9/27/67 9-27-67

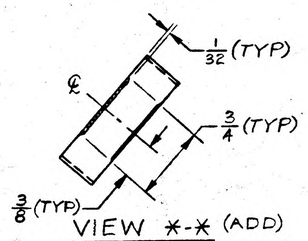
ISSUED BY: GUS HANSHIANH X1153 SECTION: V.D.I. GROUP NO. 280 PL. 25

NAS 9-1100

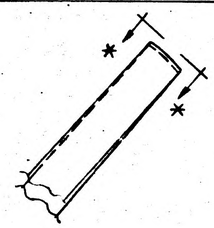
GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

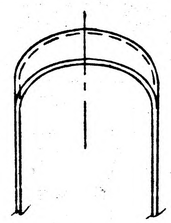
ENG 32.1 REV 3-65

DWG NO. LDW280-17380 | EO NO. B4
CONTROL INFO NO. LM-2-4246



VIEW *-* (ADD)
(FOR -19 & -21 ONLY)





* DENOTES NEXT AVAILABLE SECTION LETTER

THIS IS AN ORIGINAL EO

IN FLD/DWG, B/M & MOD/BLK ADD -19 & -21
(-19 & -21 REPLACE -15 & -17 AND ARE IDENTICAL EXCEPT AS SHOWN IN VIEW *-*)
IN MOD/BLK FOR -15 & -17 DELETE LM-4 THRU LM-15

[NOTE: -19 & -21 MAY BE MADE BY REWORKING -15 & -17 REFINISH #76 (ALODINE)]

MAIL SPEC REQ | CL II ENGRG CHG | ✓ | CL I ENGRG CHG

REASON FOR EO
INSUFFICIENT GAP BETWEEN PIPING ELBOW RETAINERS

DESCRIPTION OF EO
IN FLD/DWG, B/M & MOD/BLK, ADDED -19 & -21
DELETED LM-4(34) THRU LM-15(45) FROM -15 & -17. ADDED VIEW *-*

(2)
GAEC EO RELEASE

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-4(34) THRU	
		LM-15(45)	

DRAWING CHANGE RECD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: REWORK ✓ | SCRAP

APPROVED BY	DATE	VDI	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
[illegible]	12-7-67				—	[illegible]	[illegible] 12-7-67	[illegible] 12-11-67

PRIORITY: C
DRAWING TITLE: STRAP-D/S- FUEL TANK R.H. PROPELLANT LINE SUPPORT
DRAWING NO: LDW280-17380
EO NO: B4

ISSUED BY LIAISON J. MALONEY 12/7/67 X3604 SECTION V.D.I. GROUP NO. 335 PL 25

01

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

ENG 32.2 REV 3-65

DWG. NO. LEO 280 | EO NO. 208
CONTROL INFO NO. LDW280B6178

FOR THE FOLLOWING DWGS. AND THEIR DASH NOS., ADD LM-6(36) THRU LM-8(38) EFFECTIVITY. QUANTITIES AND NEXT ASSEMBLIES NOTED BELOW.

DWG. NO.(*)	DASH NO(**)	NEXT ASSEMBLY	QUANTITY	CHG. NO	TITLE
LDW280-17415	-11 -13,-15	LDW280-53621	2 1 EA	B4	SEE DWG
LDW280-17416	-21,-23		1 EA	B6	
LDW280M17558	-1		1	B7	
LDW280M17559	-1	LDW280-53621	1	B7	
LDW280-17765	-21,-23	LDW280-53622	1 EA	B7	
LDW280-17766	-11,-13 -15		1 EA 2	B6	
LDW280M17562	-1		1	B9	
LDW280M17563	-3	LDW280-53622	1	B8	
LDW280M17488	-1	LDW280-53621 LDW280-53622 LDW280-23619 LDW280-23620	6 6 8 8	B6	
LDW280-17380	-19,-21	LDW280-23619	1 EA	B6	
LDW280-17382	-11,-13 -15		1 EA 2	A5	
LDW280M17556	-1		1	C6	
LDW280M17557	-1	LDW280-23619	1	B6	
LDW280-17383	-11,-13,-15,-17	LDW280-23620	1EA.	B3	
LDW280-17767	-19,-21		1EA	B5	
LDW280M17560	-1		1	B9	
LDW280M17561	-1		1	B6	
LDW280M17689	-3	LDW280-23620	1	B4	SEE DWG

TO

NAS 9-1100

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG | LCD 3552 PKG1

REASON FOR EO: REPLACEMENT OF D/S SWIP II TANKS WITH SWIP I TANKS

DESCRIPTION OF EO: FOR DASH NO.(**) ADDED LM-6(36) THRU LM-8(38) EFFECTIVITY.

GAEC EO RELEASE: C

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-6(36)	THRU
LM		LM-8(38)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO | DISPOSITION OF PARTS: REWORK | NOT REQ | SCRAP

APPROVED BY: DATE 11-8-68 | VDI | SUPPORT | RELIAB GROUP | GROUP LEADER | STRESS GROUP | LIAISON ENGRG 11/8/68 | PROJ ENGRG 11/8/68

PRIORITY: C | DRAWING TITLE: SEE DWG. | DRAWING NO.: LEO 280 | EO NO.: 208

ISSUED BY H. ZWEIGMAN X86047 SECTION VDI GROUP NO. 335 PL 25

DRAWING NO.	DASH NO*	NEXT ASSY	NO. REQ	CHG. NO
LDW280 M17558	-1	LDW280-53621	1	B10
M17562	-1	LDW280-53622	1	C1
M17563	-3	LDW280-53622	1	C1
LDW280 M17557	-1	LDW280-23619	1	B9
LDW280-56913	-1	LDW280-54900	2	A2
LDW280-56913	-3	LDW290-54900	2	

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | ED NO. 127
CONTROL INFO NO. LDW280B67B7

TO THE FOLLOWING DWGS ADD EFF LM 9 (39)
NEXT ASSY AS SHOWN IN MODEL BLOCK

DRAWING NO.	DASH NO*	NEXT ASSY	NO. REQD	CHG NO.
LDW280 -17415	-11	LDW280-53621	2	
-17415	-13		1	B5
-17415	-15		1	
-17416	-21		1	
-17416	-23	LDW280-53621	1	B7
-17765	-21	LDW280-53622	1	B8
-17765	-23		1	
-17766	-11		1	
-17766	-13		1	B7
-17766	-15	LDW280-53622	2	
-17380	-19	LDW290-23619	1	
-17380	-21		1	B7
-17382	-11		1	
-17382	-13		1	A6
-17382	-15	LDW280-23619	2	
-17383	-11	LDW280-23620	1	
-17383	-13		1	
-17383	-15		1	B4
-17383	-17		1	
-17767	-19		1	C1
-17767	-21	LDW280-23620	1	
LDW280M17559	-1	LDW280-53621	1	B8
M17488	-1	LDW280-53621	6	
M17488	-1	LDW280-53622	6	B7
M17488	-1	LDW290-23619	8	
M17488	-1	LDW280-23620	8	
M17560	-1		1	B10
M17561	-1		1	B7
LDW280M17689	-3	LDW280-23620	1	B5

SERIAL SPEC SEC | CL II CHANG CODE | CL I CHANG CODE | ☑ ICD 3552 PN66 ECP A098 cc A1670 | DATE CL II RELEASED 2/4/69

REASON FOR LO: D/S PROPELLANT SWIP II TANK SUBSTITUTION

DESCRIPTION OF LO: ON DASH NO * ADDED LM 9 (39) REQMTS

EFFECTIVITY: MODEL LM | PRODUCING ACTIVITY NO. | BASIC UNIT NO. LM 9 (39) | SUB COMPR UNIT NO.

DISPOSITION OF CHANGE: NOTIFIED | RELEASE DATE | RELEASE BY | REVISED | SCRAP | APPROVED BY | DATE 2/4/69 | SUPPORT | RELEASE V.I.P. | DRWG | STRUCT LAYOUT | HYDRO SYSTEMS | PROP. SYSTEMS

PRIORITY: C | ORIGINAL TITLE: SEE DWG | DRAWING TITLE: LEO 280 | DR 127

2-4-69 ISSUED BY J. Bohun x76096 | SECTION Flow Lines (101) | GROUP NO. 332 | PL 25

01

NAS 9-1100

LDW280-17381 A

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO.		GAEC SCH NO.	

LM	LDW280-23612	LM-6(36)	1EA
LM	LDW280-23612	LM-5(35)	1EA
LM	LDW280-23612	LM-4(34)	1EA
LM	LDW280-23612	LM-3(33)	1EA
LM	LDW280-23612	LM-2(32)	1EA
LM	LDW280-23612	LM-1(31)	1EA
LM	LDW280-23612	LTA-8(18)	1EA
LM	LDW280-23612	LTA-5(15)	1EA
LM	LDW280-23612	LTA-3(13)	1EA

MODEL OR END ITEM	NEXT ASSY	MODULE OR SER NO.	REQD PER MODULE OR END ITEM
PART NO. LDW280-17381-11,-13,-15 & -17		GAEC SCH NO. 503	

2

SH REV STATUS: FOR DESCRIPTION OF REV SEE SUBQ SH										
SHEET	1.00	1.10	2.00	3.00						
REV	A	A	A	A						
SHEET										
REV										
SHEET										
REV										

LAST SECT LTR USED	
LAST DASH NO. USED	-17

GRUMMAN REL INFO A

PRIM NO.	(E601)
	207
	MP-14/A-11-28-16

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCE UNLESS SPECIFIED
FRACTIONS - DECIMALS - ANGLES
±1/32 ±.020 ±1/2°
ORIG DWG AUTH
DETAIL SPEC REQUIREMENT
CLASS II ENGRG CHANGE
CLASS I ENGRG CHANGE

CONTRACT NO. NAS9-1100 | LINE ITEM #1 | DOCUMENTATION TYPE II

DRAWN BY	BILL MAJUK	RELIABILITY	
LAYOUT BY	BILL MAJUK		
CHECKED BY	9-16-66		
GROUP LDR	J. STRAKOSCH		
VEH DESINT	W. BISCHOFF		
STRUCTURES	W. HAUCK	PROJ ENGR	J. ALBER
STRUCTURES	R. HILDERMAN	REL GROUP	C. BOTTI
WEIGHTS	W MANDRAS		

GRUMMAN AIRCRAFT ENGRG CORP
BETHPAGE, L. I., NEW YORK

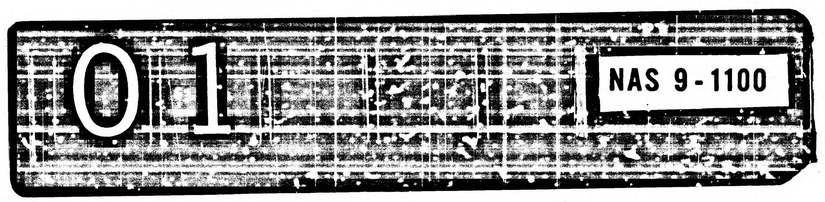
ZEE
DESCENT STAGE ~ PROPELLANT LINES
SUPPORT TRUSS AFT L.H.

SIZE	CODE IDENT NO.	
B	26512	LDW280-17381 A

SCALE NONE | SHEET 1.00 OF 4

ENG 77 1 12-65

SUPERSEDES LDW280-17381 "NO CHG." 4-12-66



REVISIONS FOR CONTINUATION OF REVISIONS SEE SHEET _____

CHANGE LTR	ITEM NO.	SHEET NO.	ZONE	GRUMMAN INFO ONLY	DET SPEC	CLASS I	CLASS II	ENGRG ORDER	DESCRIPTION	EFFECTIVITY	DISPOSITION OF EXISTING PARTS: REWORK	DISPOSITION OF EXISTING PARTS: SCRAP	CHANGED BY AND DATE	ENGRG APPD	CHIEF APPD
A	1								RETRACED NO CHG LAST REV NO CHG LOFTED DWG WAS DIM. SH. 1.00 OF 4 WAS 1 OF 3.~ R.SVOBODA~ 9-13-66.						
	2								FOR -15 DIM 2 23/32 WAS 1 23/32. (DWG CORR)	NOTED	NOT REQD		SVOBODA 9-13-66		

CHG APPROVED	LTR	GROUP LDR	VEH DES INT	STRUCTURES	STRUCTURES	WEIGHTS	RELIABILITY
	A						

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK

SIZE	CODE IDENT NO.		
B	26512	LDW280-17381	A

SCALE NONE SHEET 1.10

ENG 77.16 3-66

01 NAS 9-1100

QTY PER ASSEMBLY	CODE IDENT	PART NO.	I&T	NOMENCLATURE OR DESCRIPTION	MATERIAL	GOVT SPEC	COML SPEC	STOCK SIZE	PROCESS SYM	FINISH NO.	ZONE
		LDW280-17381-17	E	ANGLE	AL ALLOY SH	QQ-A-250/12	7075	.040 × 2 1/8 × 6 5/8	T6	88	
		LDW280-17381-15	E	ZEE	AL ALLOY SH	QQ-A-250/12	7075	.032 × 4 1/8 × 5	T6	88	
		LDW280-17381-13	E	ZEE	AL ALLOY SH	QQ-A-250/12	7075	.032 × 4 1/8 × 5	T6	88	
		LDW280-17381-11	E	ZEE	AL ALLOY SH	QQ-A-250/12	7075	.032 × 3 3/8 × 7 1/2	T6	88	

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC
88	ANODIZE	LSP-14-9030
T6	HEAT-TREAT	MIL-H-6088

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

SYM OR NO.	PROCESS OR FINISH	GRUMMAN SPEC OR MILITARY SPEC

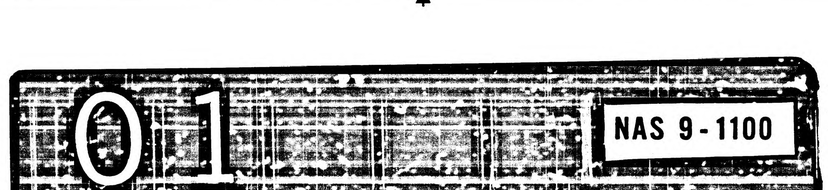
I & T: IDENTIFICATION AND TRACEABILITY IN ACCORDANCE WITH : NONE

GRUMMAN AIRCRAFT ENGRG CORP, BETHPAGE, L. I., NEW YORK

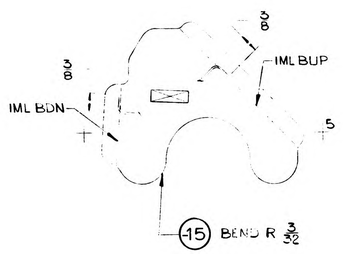
SIZE	CODE IDENT NO.		
B	26512	LDW280-17381	A

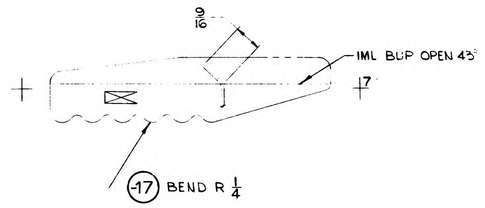
SCALE NONE SHEET 2.00

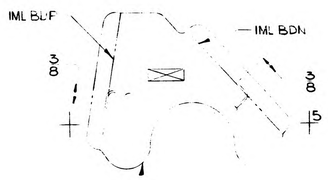
ENG 77.2 7-65

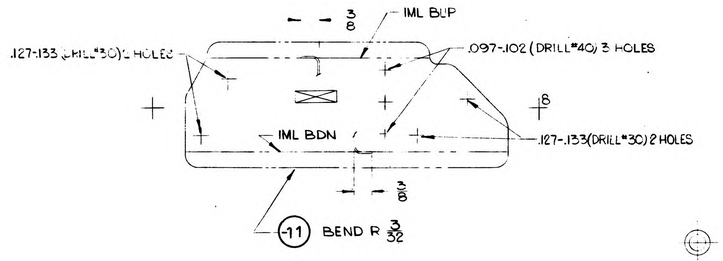


NOTES:
1. NO TOOLING HOLES PERMITTED IN PARTS.









MANUFACTURING OPERATIONS
UNLESS OTHERWISE SPECIFIED NOTES CHECKED √ APPLY TO THIS DWG.

PART NUMBER AND ALL OTHER MARKINGS IN REGION MARKED USE BOTH SIDES IF NECESSARY.	√
FILLET AND INSIDE CORNER RADII TOLERANCES .016R TO .062R ± .010; .063R TO .250R ± .015; OVER .250R ± .030	
DEPTH SHOWN FOR TAPPED HOLES IS FULL THDS. 2-3 IMP THDS. BEYOND PERMISSIBLE.	
EXTERNAL THREAD LENGTH SHOWN INCLUDES 2 IMPERFECT THREADS MAX.	
DO NOT CADMIUM PLATE & PAINT HOLES OR SURFACES MARKED WITH DOUBLE ASTERISK.	
MISMATCH STEP OF ± .005 PERMISSIBLE DUE TO CHANGE OF CUTTERS AT INSIDE INTERSECTING SURFACES.	
DIAMETERS MARKED MUST BE CONCENTRIC WITHIN FULL INDICATOR READING	
HOLES MUST BE KEPT FREE OF CHROME PLATING SOLUTION.	
ALL DIMENSIONS SHOWN TO BE MET AFTER CADMIUM PLATING. THICKNESS OF PLATE .0003 MIN. TO .0005 MAX. MIN. THICKNESS TO BE .0002 ON THREADED AREAS. NO ALLOWANCE FOR PLATING IN HOLES	
125 SURFACE ROUGHNESS INCLUDING REAMED HOLES PER MIL-STD-10	
250 FOR ALL DRILLED HOLES	
REMOVE ALL BURRS, BREAK ALL EDGES .015-.031	
INSPECTION INFORMATION MINIMUM PERMISSIBLE AVERAGE EDGE DISTANCE MARKED IS	
SYMBOL ✓ DENOTES SURFACE TO BE MACHINED	
UNLESS OTHERWISE SPECIFIED TOLERANCE ON FLANGES IS ± 1/32	√
LENGTHS OF AN, NAS & MS AL ALY RIVETS SHORTER THAN 1 INCH ARE NOT SPECIFIED.	
TOLERANCE ON LOFTED DELINEATIONS IS ± 1/32	√

GRUMMAN AIRCRAFT ENGRG CORP., BETHPAGE, L. I., NEW YORK			
LM	SIZE D	CODE IDENT NO. 26512	LDW280-17381 A
MODEL OR END ITEM	SCALE FULL		SHEET 3.00

2 FOR PHOTO REPRODUCTION 1 K2

LDW280-17381 Δ

NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER *

DWG. NO. LE0280 | ED NO. 302
CONTROL INFO NO. LDW280A1001

ENG 32.2 REV 3-66

TO THE FOLLOWING DRAWINGS LISTED, BELOW AND THEIR DASH NUMBERS * THAT ARE EFFECTIVE ON LEM-6(36) ADD EFFECTIVITIES FOR LEM-7(37), LEM-8(38), LEM-9(39), LEM-10(40), LEM-11(41), LEM-12(42), LEM-13(43), LEM-14(44) AND LEM-15(45) QUANTITIES AND NEXT ASSEMBLIES REMAIN SAME AS LEM-6(36)

DRAWING NUMBER	CHANGE NUMBER	TITLE
LDW280-17344	B1	SEE DRAWING
-17347	B1	
-17348	C1	
-17349	B3	
-17352	A2	
-17354	B1	
-17356	B1	
-17365	B2	
-17366	C1	
-17369	A2	
-17379	C1	
-17380	B1	
-17381	B1	
-17382	A1	
-17383	A1	
-17384	B2	
-17385	C1	
-17388	D??	
-17393	B2	
-17395	C2	
-17397	B1	
-17398	B1	
-17399	C1	
-17400	B3	
-17412	B1	
-17413	C1	
-17414	B2	
-17415	B1	
-17416	B1	
-17417	B1	
-17418	B1	
-17419	B1	
LDW280-17420	B1	SEE DRAWING

* USE APPLICABLE DASH NUMBERS IN DESCRIPTION OF E.O.

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG	REASON FOR EO	DESCRIPTION OF EO	GAEC EO RELEASE
			ADDITIONAL REQUIREMENTS	FOR DASH * ADDED LEM-7 THRU LEM-15 EFF.	FR 10/13/66

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	EFFECTIVITY: GAEC UNIT NO.	EFFECTIVITY: SUB CONTR UNIT NO.	DRAWING CHANGE REQD: REVISE DWG	DRAWING CHANGE REQD: RECORD EO	DISPOSITION OF PARTS: REWORK	DISPOSITION OF PARTS: SCRAP	APPROVED	DATE	SUPPORT	RELIAB GROUP	GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG
LEM		LEM-7(37), LEM-8(38), LEM-9(39)	LEM-7(37)			NOT REQ'D	✓		10/5/66						11-11-66
LEM		LEM-10(40), LEM-11(41), LEM-12(42)	LEM-12(42)												
LEM		LEM-13(43), LEM-14(44), LEM-15(45)	LEM-14(44), LEM-15(45)												

PR	DRAWING TITLE	DRAWING NO.	EO NO.
C	NOTED	LE0280	302

ISSUED BY M. GREY / J. STRAKOSCH X1153 SECTION VEHICLE DESIGN INT. GROUP NO. 280 PL 35

NAS 9-1100

C

ENG 22.1 REV 3-66

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-17381 | EO NO. B2
CONTROL INFO NO. LM-2-3321

FOR -17
IN FLD/DWG REVISE CALLOUT
DELETE "IML BUP OPEN 43°"
ADD "IML BDN OPEN 43°"

2

DETAIL SPEC REQ	CL II ENGRG CHG	CL I ENGRG CHG

REASON FOR EO: DRAWING CORRECTION ONLY. DRAWING ERRONEOUSLY RETRACED

DESCRIPTION OF EO: FOR -17, IN FLD "BDN" WAS "BUP"

GAEC C EO RELEASE: FR

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		NOT REQD	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO
DISPOSITION OF PARTS: NOT REQD — REWORK | SCRAP

	APPROVED BY	DATE
SUPPORT	-6-	2/16/67
RELIAB. GROUP	VDI	2/16/67
GROUP LEADER		2-20-67
STRESS GROUP		2/16/67
LIAISON ENGRG		2/16/67
PROJ. ENGRG	RHC	2/16/67
[illegible]		

PRIORITY: E
DRAWING TITLE: ZEE~DESCENT STAGE~PRPLN LINES SUPPORT TRUSS AFT L.H.
DRAWING NO.: LDW280-17381
EO NO.: B2

ISSUED BY LIAISON J. MALONEY 2/16/67 SECTION V.D.I. GROUP NO. 335 PL 35

01 NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG NO. LEO 280 | ED NO. 1347
CONTROL INFO NO. LDW280B7395

FOR THE DWGS LISTED BELOW: DELETE LM-15(45) EFF FROM ALL DASH NOS. *

DWG NO.		CHANGE NO	DWG NOMENCLATURE
LDW280-17352	✓	A4	SEE DWG
-17354	✓	C1	
-17356	✓	B3	
-17362	✓	B5	
-17365	✓	B4	
-17366	✓	C3	
-17369	✓	A5	
-17375	✓	C1	
-17379	✓	D4	
LDW280-17381	✓	B3	SEE DWG

* APPLICABLE DASH NOS (5)

DETAIL SPEC REQ | CL II ENGRG CHG | CL I ENGRG CHG ✓ LCD 3587 PKG 50 PG. 10 CCA 1821

REASON FOR EO: LM-15(45) NO LONGER REQD

DESCRIPTION OF EO: DELETED LM-15(45) EFF FROM — * —

GAEC EO RELEASE: 4/16/69

BASIC	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LM-15(45)	

DRAWING CHANGE REQD: REVISE DWG ✓ | RECORD EO -
DISPOSITION OF PARTS: REWORK | SCRAP ✓
APPROVED BY / DATE: VDI 4/16/69 | SUPPORT | BELLAB GROUP | GROUP LEADER 4-24-69 | STRESS GROUP 4/18/69 | LIAISON ENGRG | PROJ ENGRG 4/16/69

PRIORITY: C
DRAWING TITLE: SEE DWG
DRAWING NO.: LEO 280
ED NO.: 1347

05 28 69 ISSUED BY MEVORAH / THORTJOSEN X86046 SECTION VEH DES INT GROUP NO. 335-35

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NAS 9-1100

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512

ENG 32.1 REV 3-65

ENGINEERING ORDER

WORK NO. LEO 280 | EO NO. 1540

CONTROL INFO NO. LDW280B 8080

FOR ALL PART NUMBERS EFFECTIVE ON LM-10 (40) [redacted]
ADD LTA-11 ([redacted] 23) REQUIREMENTS WITH THE SAME
NEXT ASSEMBLY AND QUANTITY.

DRAWING Nº *	TITLE	CHANGE Nº
LDW280-17375	SEE DWG	C2
379		D5
381		B4
384		B5
385		C4
—		
393		B4
397		B5
413		D4
LDW280-17414	SEE DWG	B4

DETAIL SPEC REQ. | CL II ENGRG CNG | CL I ENGRG CNG | V | LCD 3890 PKG 99 Pg 5 & 6 of 96 (5)

REASON FOR EO: NEW DYNAMIC TEST VEHICLE REQ'D FOR EXTENDED TANKS

DESCRIPTION OF EO: ON * ADDED LTA-11 (23) REQMTS

GAEC EO RELEASE: JK 8-8-69; JK 9/1/9; [redacted] 8-9-69

MODEL	EFFECTIVITY: PROCURING ACTIVITY NO.	GAEC UNIT NO.	SUB CONTR UNIT NO.
LM		LTA-11([redacted] (23)	

DRAWING CHANGE REQD: REVISE DWG ✓; RECORD EO

DISPOSITION OF PARTS: NAT REQ'D REWORK; SCRAP

APPROVED BY								
DATE	7-29-69			N				
	VDI	SUPPORT	RELIAB GROUP	8-7-69 GROUP LEADER	STRESS GROUP	LIAISON ENGRG	PROJ ENGRG	[redacted]

PRIORITY: C

DRAWING TITLE: SEE DRAWINGS

DRAWING NO.: LEO 280

EO NO.: 1540

8-12-69 ISSUED BY G. HANSMANN X87222 (ML) SECTION VDI GROUP NO 335 PL 25

01

NAS 9-1100

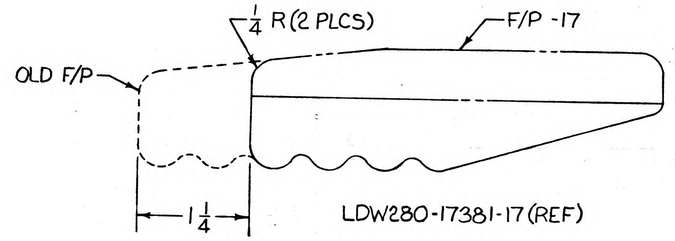
ENG 32.1 REV 3-65

GRUMMAN AIRCRAFT ENGINEERING CORP.
CODE IDENT NO. 26512
ENGINEERING ORDER

DWG. NO. LDW280-17381		EO NO. 85
CONTROL INFO NO. LM-2-5994		

IN F/D TRIM -17 AS SHOWN

REWORK NOTE: FOR BARE METAL FINISH NO 76.



DETAIL SPEC REQ		CL II ENGRG CHG		CL I ENGRG CHG	√	LCD 3890

REASON FOR EO: MATL NOT REQD ON ASSY.

DESCRIPTION OF EO: IN F/D TRIMMED 1¼ MATL FROM -17.

R (2) GAEC EO RELEASE 2-18-70

MODEL	EFFECTIVITY	GAEC UNIT NO.	
	EI		
LM	LFM 507	LTA-5/R(159)	
LM		LTA-11(23)	
LM	LM-10(40)	THRU	LM-14(44)

DRAWING CHANGE REQD: REVISE DWG	RECORD EO	DISPOSITION OF PARTS: REWORK	SCRAP
		√	

PRIORITY: C

DRAWING TITLE: ZEE ~ D/S SUPPORT TRUSS ~ AFT L.H. PROP LINES

DRAWING NO.: LDW280-17381

EO NO. 85

	APPROVED BY	DATE
GROUP LEADER	PST	2-17-70
STRESS GROUP	KC	2/17/70
LIAISON ENGRG	[illegible]	2-17-70
PROJ ENGRG	[illegible]	2/17/70
	[illegible]	2/18/70
SUPPORT	VOI	13 Feb 70
RELIAB. GROUP		

ISSUED BY LIAISON J. STECEWYCZ X3605 SECTION Vehicle Design Integ GROUP NO. 280 PL 25

01

NAS 9-1100